

[D. De ROTHSCHILD...Del engaño de Waterloo ¡al engaño del calentamiento global!](#)

[Lo que ignoras sobre las fumigaciones I](#)

[Acabando con la "conspiración". Calentamiento global y Chemtrails \(Geoingeniería climática\)](#)

## Ley de aguas de España

do, con las salvedades expresamente establecidas en esta Ley:

a) Las aguas continentales, tanto las superficiales como las subterráneas renovables con independencia del tiempo de renovación.

b) Los cauces de corrientes naturales, continuas o discontinuas.

c) Los lechos de los lagos y lagunas y los de los embalses superficiales en cauces públicos.

d) Los acuíferos subterráneos, a los efectos de los actos de disposición o de afección de los recursos hidráulicos.

e) Las aguas procedentes de la desalación de agua de mar una vez que, fuera de la planta de producción, se incorporen a cualquiera de los elementos señalados en los apartados anteriores.

### Artículo 3. *Modificación de la fase atmosférica.*

La fase atmosférica del ciclo hidrológico sólo podrá ser modificada artificialmente por la Administración del Estado, o por aquellos a quienes ésta autorice.

## CAPÍTULO II

### De los cauces, riberas y márgenes

#### Artículo 4. *Definición de cauce.*

Álveo o cauce natural de una corriente continua o discontinua es el terreno cubierto por las aguas en las máximas crecidas ordinarias.

#### Artículo 5. *Cauces de dominio privado.*

1. Son de dominio privado los cauces por los que ocasionalmente discurran aguas pluviales en tanto atraviesen, desde su origen, únicamente fincas de dominio particular.

2. El dominio privado de estos cauces no autoriza para hacer en ellos labores ni construir obras que puedan alterar el curso natural de las aguas o alterar su cali-

Cabe destacar el artículo 3 de la ley de aguas de España

[http://noticias.juridicas.com/base\\_datos/Admin/rdleg1-2001.html](http://noticias.juridicas.com/base_datos/Admin/rdleg1-2001.html)

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*nubes normales*







*cielo después de la geoingeniería*





Normalizando la geoingeniería:

[La ONU admite como nueva nube las estelas de condensación de los aviones](#)

[Científicos de EE.UU. rociarán los cielos con partículas reflectantes para enfriar el planeta](#)



# Jets changing climate — for good or ill?

*From GRAHAM STEWART, in Chicago*

**T**HE CROWDED skies around Chicago are causing cloudy skies and changing the climate along flight paths into the world's busiest airport.

Aircraft criss-crossing the American midwest are leaving vapour trails that eventually form wispy cirrus clouds, according to a study by Illinois climatologists.

These man-made clouds apparently cause cooler days and more rain.

The vapour trails stream out of the jet engines of aircraft flying at high altitudes, usually above 6,000 metres. They form when condensed moisture from the jet exhausts hits the cold air and freezes into ice crystals.

The weather study showed that a 10 per cent increase in cloudiness in parts of Illinois, Iowa, Missouri, Indiana and Ohio had coincided with the rapid growth of commercial aviation since the 1960s.

The affected areas were under the main east-west and north-south air corridors across the central US.

The hub of this traffic is Chicago's O'Hare Airport, which at peak times has an aircraft landing or taking off every 30 seconds. Last year O'Hare handled 724,155 flights and 43.6 million passengers — more than any other airport in the world.

"We know the jets make clouds, and we believe they are the major cause of the increased cloudiness in these flight pathways", said Dr Stanley Changnon, head of atmospheric sciences at the Illinois Water Survey Department, which is conducting the study.

"When you plot the cloud corridor, you find it follows the same path as the jet air traffic", he said.

The same thing was probably happening along busy flight paths in Europe.

The vapour trails, called contrails by the climatologists, don't take long to spread out across the sky. They expand to a width of three kilometres in one hour, and to 32 kilometres in two hours.

Observing one much-travelled air lane into Chicago that carries about 700 flights a day, Dr Changnon noted, "You can start off with a clear day in the

morning and by evening the sky will be covered by a cloud shield from jet contrails".

He estimates some 2,000 commercial aircraft fly over Illinois every day, more than half going to or from O'Hare.

"Illinois is definitely getting cooler, cloudier and rainier", he said. "While neighbouring States outside the flight paths are not".

Dr Changnon believes that a full scientific study is necessary to assess the impact of the man-made clouds, and to discover whether the results are desirable or not.

Because the artificial cloud cover restricts the amount of sunshine, it makes days cooler in summer and autumn, when jet contrails are most prevalent.

At the same time it moderates extremes in temperature. While days tend to be cooler, nights are slightly warmer because the cloud blanket keeps in more of the heat escaping.

Dr Changnon says the increased cloudiness should be a boon to farmers because it reduces evaporation, enabling them to conserve water, and because the contrails apparently produce more rainfall.

In addition, more moderate temperatures mean more favourable growing conditions for crops.

Dr Changnon says ice crystals in the contrails often "seed" heavier cumulus clouds as they drift down, and so cause rain.

The vapour trails also can help weather forecasters. They give early warning of an advancing low-pressure system, according to Dr Changnon.

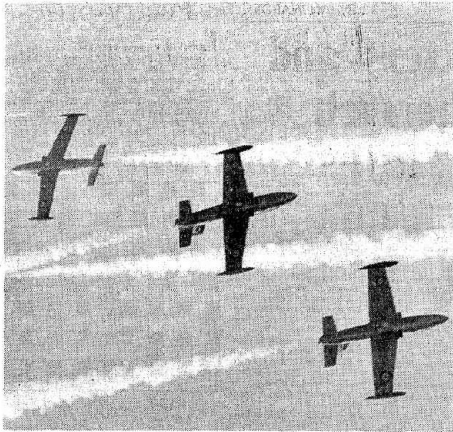
"You can see them forming hours before natural clouds appear", he explained. "They need moisture in the air. You don't get contrails if the air is dry".

At present Dr Changnon and his staff of four are concentrating on collecting data and assembling photographs of the cloud cover as it develops.

"What is clear, is that man really can alter the climate, accidentally or otherwise", he said.

— **Reuter, through AAP.**





Jets' vapour trails: altering the climate over Chicago?

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— Reuters, through AAP.

## 'IT MATTERS NOT HOW MODERN THE WEAPON OF DEATH'

# Europe alive with nuclear protesters

From GWYNNE DYER, in London

QUITE suddenly, Western Europe is alive with protest groups campaigning against NATO's plans to modernise its nuclear weapons in the Continent.

Their growth has been so swift, and their influence is now so widespread, that the Netherlands and Belgium are very likely to renege on their promises to provide bases for the new US nuclear weapons. In West Germany, Chancellor Schmidt and his Foreign Minister, Mr Genscher, have both had to threaten resignation in order to hold their respective parties behind the coalition Government's commitment to carry out the NATO plan.

The movement draws some of its strength from anxieties about President Reagan, whom many Western Europeans view as a cross between John Wayne and Dr Strangelove (except without the brain). Soviet propaganda has also played a role. But the strongest impulse has been the fear that Europe will become the nuclear battlefield of the superpowers, where America and the USSR can settle their quarrels without doing fatal damage to each other's homelands.

However bizarre this concern is, it is not new. Twenty years ago a young West German politician called Helmut Schmidt inveighed against leaving American medium-range missiles in Western Europe. "Land-based missiles can be put in Alaska, Greenland (or) Labrador . . . but under no circumstances in densely populated areas. They are focal points for the enemy's nuclear rockets". Shortly afterwards, all US nuclear missiles on Euro-

pean soil able to reach Soviet territory were, in fact, withdrawn.

Four years ago, however, it was the same Helmut Schmidt, now Chancellor, who first sounded the alarm about new Soviet medium-range nuclear missiles. Speaking in London in October, 1977, Mr Schmidt pointed out that the Soviets were building hundreds of SS20 missiles which could devastate every part of Western Europe from launching points well inside the Soviet Union.

What Mr Schmidt actually wanted was East-West talks to control nuclear weapons based in Europe, but it was quickly pointed out that NATO had no equivalent to the SS20s to bargain with. So in December, 1979, in a response that constituted an arms control foundeerly familiar, NATO decided it would introduce 572 new American medium-range missiles into Western Europe — allegedly in order to force the Soviets to negotiate.

Predictably, the Soviet Union then refused to negotiate unless NATO dropped its plans first, and meanwhile speeded up production of its own medium-range missiles. By now the USSR has deployed 210 of these SS20s.

After more than a year of vitriolic Soviet propaganda failed to shake NATO's intention to start deploying its own missiles in 1983, Moscow sent word to the US that it was ready to talk without preconditions. But by now it was 1981, and the new Administration in Washington wasn't really interested in arms control at all.

The Reagan Administration sincerely be-

lieves in "negotiating from strength", and in the possibility of regaining some meaningful "strategic superiority" over the Soviet Union in nuclear weapons. Meanwhile, however, European public opinion has become alarmed by the deteriorating world situation. Naturally enough, it has focused on the question of nuclear weapons in Europe.

Since the protesters cannot do anything about Soviet nuclear weapons in Europe, they have concentrated on trying to keep the new American nuclear weapons out of Western Europe, on the grounds that they will "distract" Soviet nuclear strikes against their countries, willfully ignoring the fact that the Soviets have just recently built and aimed 210 SS20s at their countries. But the main US reluctance to enter arms-control negotiations with the Soviets undermines almost every justification that Western European political leaders can offer to their electorates.

It has become impossible to forecast whether NATO's Western European members will ultimately allow the new US medium-range nuclear missiles to be based in their countries or not. It should be added, however, that this does not really matter except at the symbolic level, any more than the SS20s really matter.

The anxieties about Europe as the first nuclear battlefield are a trifle belated: it has been that for 30 years now. The fact that Western European cities would now be destroyed by highly sophisticated SS20 missiles instead of crude but effective SS4s and SS5s is unlikely to make any perceptible difference to the victims.

Even without the planned new medium-range missiles, the United States already has enough nuclear delivery vehicles in and around Europe — Polaris-bombers in Germany, the Low Countries, Greece and Turkey, F111 bombers in England, the Sixth Fleet in the Mediterranean, Polaris and Poseidon submarines — to destroy everything above ground in the Warsaw Pact countries without firing a single US-based missile. That has no meant in the past that the US could hope to fight a nuclear war in Europe without suffering nuclear attacks on its own territory, and it does not mean it now.

We live in the era of "nuclear plenty", and there are already so many nuclear weapons around (including approximately 11,000 destined for Eastern and Western Europe targets alone) that it is almost impossible for any new delivery vehicle to make a real difference. The argument over the "European nuclear battlefield", therefore, is one of those cases where it is important not to pay too much attention to mere technical facts.

What matters, to all participants in the argument, is the symbolism: the SS20 as symbol of the Soviet threat, the equivalent American medium-range missiles as symbols of the continuing American commitment to Western Europe, the "European nuclear battlefield" as the most effective slogan of a revived unilateral disarmament movement in Western Europe; and US arms control talks with Moscow as the most effective way of thwarting that movement. Nobody really cares much about the missiles themselves, nor should they.

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# Waltons

Durante la década de 1970 los medios de comunicación promovieron el alarmismo debido a un "enfriamiento global" advirtiéndole de que venía una nueva edad de hielo. Los fenómenos meteorológicos extremos se promocionaron como signos de la llegada de esta supuesta nueva era de hielo y la contaminación de origen humano se atribuyó como la causa.

### The Coming Ice Age - 1978

The prospect is literally chilling. The ultimate in climate control — 20 degrees cooler not only inside but outdoors as well.

And if by now we are accustomed, if not inured, to the physical threat of pollution, along comes a warning there may also be dire political consequences.

Dr. Arnold Reitze, an expert in the legal aspects from Cleveland's Case Western Reserve University, suggests pollution, or the effort to control it, could be fatal to our concept of a free society.

As likely inevitable restraints on the individual and mass, Reitze suggests:

- **Outlawing the internal combustion engine for vehicles and outlawing or strict controls over all forms of combustion.**
- **Rigid controls on the marketing of new products, which will be required to prove a minimum pollution potential.**
- **Controls on all research and development, to be halted at the slightest prospect of additional pollution.**
- **Possibly even population controls, the number of children per family prescribed and punishment for exceeding the limit.**

In Reitze's view, "We will be forced to sacrifice democracy by the laws that will protect us from further pollution."

The Argus-Press - January 26, 1970

*"Seremos forzados a sacrificar la democracia por las leyes que nos protegerán de la contaminación"*



## EDITORIAL

### Pollution Prospect A Chilling One

For a long time now man has been trying to do something more than talk about the weather. Ironically and unfortunately, he may already have done far more than he imagines, or desires.

In fact, should a new Ice Age descend upon the earth in the centuries immediately ahead, man — or at least those as yet un-asphyxiated survivors from his present billions — may have to acknowledge that he brought it on himself.

That, at least, would seem to be the moral of the latest horror story from the pollution front. Since the advent of the Industrial Revolution, debris from manufacturing processes has been accumulating in the atmosphere to such an extent that the earth is now enveloped in a layer of dust which has the effect of reflecting back into space a portion of the energy radiated by the sun.

The result has been a measurable lowering of average temperatures, not merely in industrial areas but worldwide. So far it is only in fractions of a degree. But even minor temperature changes, if prolonged and widespread, can have startling effects on climate and, consequently, on plant and animal development and survival. It would not take many degrees to trigger renewed expansion of the polar ice masses.

The prospect is literally chilling. The ultimate in climate control — 20 degrees cooler not only inside but outdoors as well.

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In Reitze's view, "We will be forced to sacrifice democracy by the laws that will protect us from further pollution."

All is not despair and disaster, however. President Nixon's decision to make environmental cleanup a major administration effort and, even more importantly, continuing and growing public agitation are hopeful indications that all is not necessarily already lost.

Fortunately, man has the capacity, if often imperfectly exercised, to learn. He can say that he did not know the consequences back when he began to transform, and devastate, the environment for his own often questionable purposes. He does know now, and the measures to correct the damage are either already at hand or largely within his grasp.

It is up to him to make a little knowledge not a dangerous thing, but his salvation from a deep-frozen future and a smoggy version of 1984.



### You Mean She Really Is Comin' 'Round the Mountain?



## Neutral U.S. May Defer Soviet-China Showdown

By LEON DENNEN  
NEA Foreign News Analyst

UNITED NATIONS, N.Y. (NEA) — As relations between Russia and Red China continue to deteriorate, the rival Communist leaders are beginning to edge in the direction of capitalist America.

The Russians have long been hinting that in a war with China they would have the backing of the United States. They even exploited the secret talks with the Nixon administration on strategic arms limitation to frighten their Peking enemies with "encirclement" by the two major nuclear nations.

But the Chinese seem to have reached the conclusion that Soviet imperialism is a greater threat to their independence than American capitalism.

Their sudden willingness to resume diplomatic contact with the United States stems directly from the explosive tensions developing between Moscow and Peking.

Now it is the Kremlin's uneasy rulers who, complain about an American-Chinese "alliance" against Russia. Ironically, if war between the Red giants is ultimately avoided it will be because the United States—long castigated by Marxist-Leninists as an imperialist nation—decided to stay neutral in their quarrel.

For President Nixon made it clear that the United States will not become Russia's ally against China or China's ally against Russia.

That this is a realistic policy is now conceded even by Russia-oriented diplomats in the State Department. They are also increasingly worried that the Russians' obsession with Mao Tse-tung may prompt them to initiate military moves against China that could imperil world peace.

According to Western intelligence, Moscow's China experts and generals are convinced that Russia's relations with Peking can only grow worse. In their view, even the younger generation of Chinese leaders has been infected with Mao's hatred for Russia.

They thus favor a major military strike against Peking in order to oust Mao and replace him with pre-Russian

puppets like Wang Ming, once a top Chinese Communist who has lived in Moscow for many years.

When France's Foreign Minister Maurice Schumann recently visited Russia he was startled by the Kremlin's highly undiplomatic request for setting up of a French-Russian "information pool" on Red China.

He was even more astonished when the Russians asked him to intercede with other Western nations to join the organization designed to spread anti-Peking propaganda. The Kremlin leaders insisted in their conversations with Schumann that Mao was "another Hitler" and that they expected the Chinese to attack Russia. Even the time was given—the first half of 1970.

Since it is the traditional policy of the Russians to accuse others of the aggression they are about to commit themselves, the inescapable conclusion is that the Red army must be considering a preemptive strike—possibly at the Chinese nuclear testing ground in Sinkiang.

The Kremlin leaders insisted in their conversations with Schumann that Mao was "another Hitler" and that they expected the Chinese to attack Russia. Even the time was given—the first half of 1970.

This is obviously the fear of Peking leaders who are reported to be taking concrete steps for a long war, including intensified training of guerrilla units.

The Chinese do not expect a quick or easy Soviet victory despite Russia's overwhelming nuclear superiority. They have often been quoted as stating that half of their population of more than 700 million would survive a nuclear war.

They were stressed again by Premier Chou En-lai in a conversation with a Western diplomat. Chou is reported to have said:

"If there was a war it would not matter all that much to the Chinese, who could lose half their population and yet remain the greatest nation in the world."

The Chinese seem to believe that war with Russia is "inevitable." How soon the military confrontation will erupt is anyone's guess.

But there is no doubt that Nixon's affirmation of American neutrality and his moves to resume diplomatic contact with China will have some sobering impact on Moscow and Peking and perhaps postpone the showdown.

Even Communist nations like Yugoslavia and Romania welcome Nixon's pragmatic foreign policy as a contribution toward lowering international tension.

## Nixon Relentless in Aim To Cut Defense Spending

By BRUCE BLOSSAT

NEA Washington Correspondent

WASHINGTON (NEA) — The cut in military spending proposed in the new 1971 federal budget will not satisfy those critics who are demanding slashes up to \$1 billion. But it will be substantial, and it could approach half that figure.

"Though you would never know it from listening to some people, the Nixon administration has been on a downward defense spending course almost from the outset."

According to a comprehensive military budget report in the weekly National Journal, former President Johnson's adjusted proposal for defense spending in the current 1970 fiscal year was \$77.7 billion. President Nixon's April 15 revisions of the budget pared this figure by \$2.5 billion to \$75.2 billion.

On Aug. 21, Defense Secretary Laird announced that additional cuts of \$2 billion would be made in the current year. He indicated half of this sum would be saved through base closings, personnel cutbacks, retirement of ships and reduced military flight training.

When Congress finally finished work on the bill for military outlays in the 1970 fiscal year, it had cut \$3.6 billion off Nixon's original April estimate. But that figure was just \$2.6 billion below the level indicated by Laird in August.

Most of the additional savings will not be made in this current year, as a matter of fact, because the congressional cuts are largely in "non-obligational authority"—which gives the Pentagon power to make commitments for future spending.

Laird's most recent statement forecasting a loss of 1,250,000 military and military-connected civilian jobs from mid-1969 to mid-1971 is a clear sign that the President intends to keep resolutely on the downward course. It presumes more big troop withdrawals from Vietnam.

The need to curb still-spiraling inflation is the dominant driving force at work. Despite Laird's presumed hawkish-

ness, this battlewise politician's conservative instincts in the domestic arena really do put him in league with the President in the inflation struggle.

The gradual winding down of our combat role in the Vietnam war and the cautious lowering of our "profile" elsewhere in the world are declared Nixon policies which fit into the inflation fight. Some analysts here argue, indeed, that the effort to cool the economy is a "forcing factor" which will give an inescapable reality to Nixon's Guam doctrine of the lowered profile.

Whatever the power of this compulsion within the administration, one can nevertheless find judicious skeptics who think there may be, in the years just ahead, major new military spending to offset cutbacks presently foreseen in Vietnam and elsewhere.

Former Budget Director Charles Schultz, writing in the magazine, "The Public Interest," contends that by fiscal 1974, non-Vietnam military spending will have soared nearly \$20 billion above the levels of fiscal 1969.

He sees this rise coming from already authorized or predictable boosts in pay for military personnel and Defense Department civilian employees, cost escalation from inflation, and the future spending consequences of developing weapons systems like ALBM, the new Poseidon missiles for Polaris nuclear submarines, a proposed new continental air-defense system and so on.

In Schultz's judgment, these almost certain added outlays will closely balance any projected savings from the Vietnam war, even assuming a virtual close-out of our role there. His estimate of our Vietnam spending at around \$17 billion to \$20 billion annually is lower than some calculations.

Schultz makes the point that Vietnam war costs tend to be inflated by those who assign to the war all charges affecting fleet task forces in the Gulf of Tonkin and B-52 bombing missions. If war was ended, regular naval and air units still would be costing money.

There seems no reason to doubt that the President is trying to put a squeeze on defense spending. Yet the prospect of long-range success may not be too bright.

## Methadone Helps D.C. Addicts Kick Habit

By MARY ELLEN RIDDLE  
NEA Staff Correspondent

WASHINGTON — (NEA) — The nation's capital is trying to get the monkey off its back.

District of Columbia officials estimate 50 per cent of the inmates of local jails are arrested for drug-related crimes and most of those have been arrested before. The real offender in these cases is heroin, a highly addictive narcotic that almost inevitably leads the addict to crimes other than illegal use of the drug.

A heroin habit is expensive. The average addict's daily fix costs between \$30 and \$50. For some, it takes as much as \$100 worth of heroin to dissolve the tension and physical pain of withdrawal into a euphoric high.

The addict's life is a saw-saw. He can't hold a job. When he is high he can't function and when the need for another fix starts creeping up on him, his only concern is to put together the cash he needs to score (buy) enough for another day. Even if an addict could hold a steady job, few of them are qualified for positions that pay enough to support the

habit and provide for other needs.

So they steal. It's small-time stuff—shop-lifting, minor burglaries, stick-ups, purse snatchings, muggings. But to feed a \$50-a-day habit the addict has to steal about \$250 worth of merchandise. The value of stolen goods goes down quickly when the thief has to sell quickly. If the estimate of 3,000 addicts in Washington is correct, these small thefts make up a significant percentage of D.C. crime.

Washington jails have handled addicted prisoners by putting them on a "cold turkey" withdrawal. Or they have tried to. A recent inspection of D.C. jails showed that heroin and other drugs do get in to inmates with outside connections. But addicts who are withdrawn usually head straight for the nether when they are released and begin the daily cycle of stealing, scoring and shooting up all over again.

The District of Columbia is trying to break the cycle. Beginning this month the Department of Health and the Department of Corrections are working together to treat addicts with a daily glass of orange juice spiked with the synthetic drug, methadone, which is chemically the same as morphine.

"Methadone blocks out withdrawal symptoms," said Arthur Kiracofe, a public health official, and it is administered in such large doses that, even if an addict does take heroin, he gets no high from it. Kiracofe said the methadone itself does not produce a high and an addict being treated with the drug

can function normally in a job and with his family.

Methadone is also an addictive drug, so using it as a replacement for heroin has been controversial. Opponents say it's just as bad to be addicted to methadone as to be hooked on heroin, but supporters counter with the argument that, since methadone is legal and costs the addict nothing, using it will cut into the city's crime rate.

Although a daily dose of methadone costs less than \$1, the program costs as much as \$1,500 for each addict treated during the first year. The cost should decrease after the first year. The established program in Baltimore costs about \$11 a day. The new program in D.C. has authorized \$600,000 for the program's first year and planners hope to treat 250 to 300 addicts next year and add 300 more to the program in each year after 1970.

Methadone is being used to treat addicts in about 30 other metropolitan areas. The New York program directors claim to have kept 80 per cent of the addicts treated in jail after the first year.

The D.C. program is different from other methadone projects. After four or five years on the synthetic drug, the health department hopes it will be able gradually to withdraw the addicts from methadone. Kiracofe said this has not been done systematically anywhere else, but he thinks it will work.

Complete withdrawal from methadone will only be attempted, he said, after the addict has proven he is not likely to relapse. The monkey climb back on his back.



### Not All Heart Defects Require an Operation

By WAYNE G. BRANDSTADT, M.D.

she should be seen by a child psychologist.

(Newspaper Enterprise Ass'n.)

Please send your questions and comments to Wayne G. Brandstadt, M.D., in care of this paper. While Dr. Brandstadt cannot answer individual letters, he does answer letters of general interest in future columns.

### Flight of Time

10 YEARS AGO

BYRON — Jim Munoz and Janice Frutkay were crowned king and queen Saturday night at the annual Senior Snow Ball attended by 80 couples in the high school gymnasium.

ELSIE — Miss Gayle Peters and Tom Bradley will be among a group of 35 youth delegates from Methodist churches throughout Western Michigan to attend a United Nations-Washington Seminar Feb. 4-13.

24 YEARS AGO

OWASSO — We were experiencing more of that unpredictable Michigan weather. Within 12 hours the mercury dropped 33 degrees, from a balmy 65 last night, to a blizzard 32 morning.

DURAND — The sports banquet at the Durand High School last night was a tremendous success as a crowd of 340 gathered to listen to guest speaker Van Patrick and other sports notables.

30 YEARS AGO

BURTON — Mr. and Mrs. Fred Busha were hosts Wednesday for an all-day meeting of the Burton Ladies' Aid Society of the Burton Methodist Church.

Mrs. Esther H. Harvey, returned missionary from India, will speak at the Gospel Mission, 814 West Main street, Sunday afternoon.

40 YEARS AGO

The Cities Service Oil Company will open its new station at West Main and Shawanawee streets Monday. The station will give day and night service.

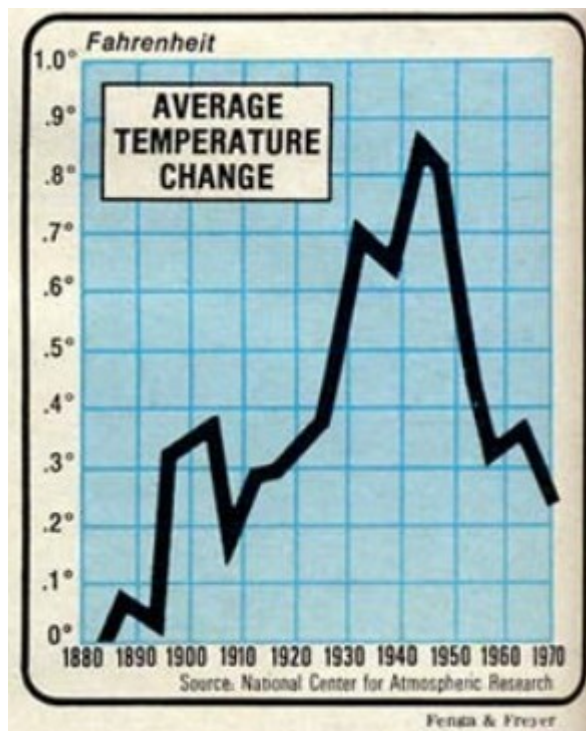
Property owners of Owosso

Friday paid up the city treasury more money in taxes than has ever been paid in one day, in the history of the city today, according to an announcement this morning by City Treasurer Wayne Taylor. The amount was \$100,000.

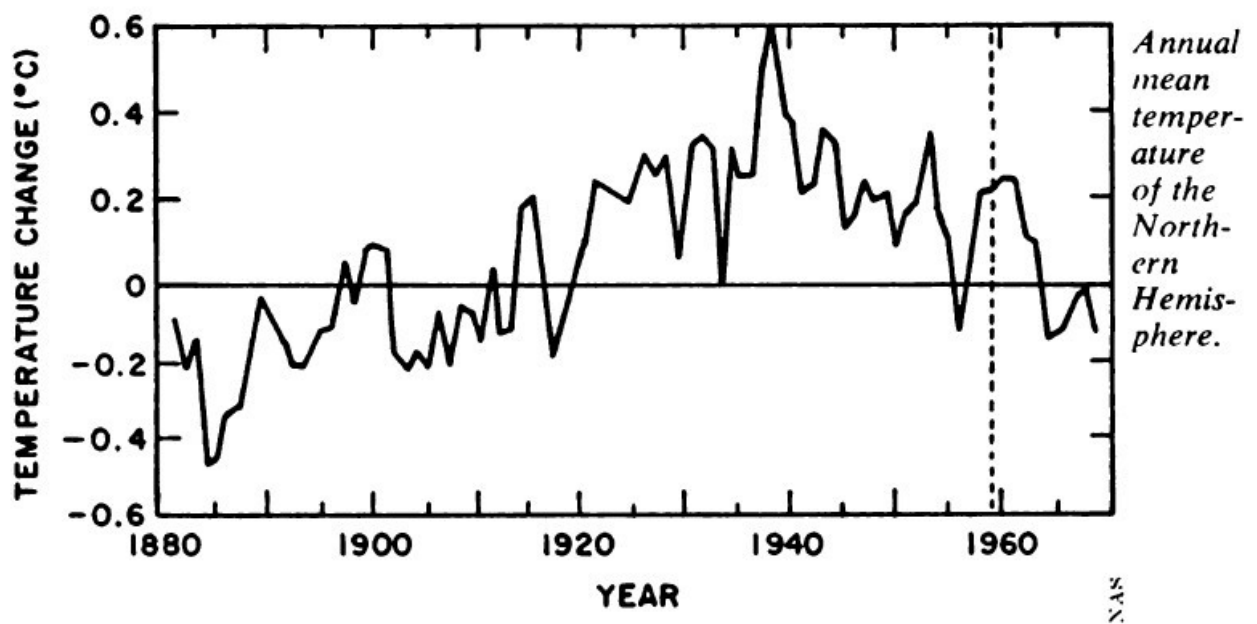
50 YEARS AGO

WASHINGTON — Rural mail carriers are resigning at the rate of 50 a day. S. W. Brown, representing the National Mail Carriers' Association, told the Senate post office committee today. He added that the service faced serious difficulties unless internal relief was accorded the employees soon.





NCAR [newsweek\\_coolingworld.pdf](#)



National Academy Of Sciences [Science News](#)



## *U.S. and Soviet Press Studies of a Colder Arctic*

**By WALTER SULLIVAN**

The United States and the Soviet Union are mounting large-scale investigations to determine why the Arctic climate is becoming more frigid, why parts of the Arctic sea ice have recently become ominously thicker and whether the extent of that ice cover contributes to the onset of ice ages.

[TimesMachine: July 18, 1970 – NYTimes.com](https://www.nytimes.com/1970/07/18/archives/us-and-soviet-press-studies-of-a-colder-arctic.html)

"Los Estados Unidos y la URSS impulsan estudios sobre un [Ártico](#) más frío"

"Los Estados Unidos y la Unión Soviética están organizando investigaciones a gran escala para determinar porqué el clima del [Ártico](#) se está volviendo más frío, porqué partes del hielo del [océano Ártico](#) se han vuelto recientemente más [ominosamente](#) voluminosas y [sin importar si](#) la extensión de esa capa de hielo contribuye al [comienzo](#) de las edades de hielo.

Por aquél entonces cada gran organización encargada de estudiar el clima defendía la teoría de que una nueva era glacial se acercaba.

# There's a new Ice Age coming!

NORWICH, England (AP) — A new Ice Age is creeping over the Northern Hemisphere, and the rest of this century will grow colder and colder, a British expert on climate says.

Prof. Hubert Lamb, director of climate research at the University of East Anglia, had a few comforting thoughts in an interview Sunday:

"The full impact of the new Ice Age will not be upon us for another 10,000 years and even then it will not be as severe as the last great glacial period.

"We are past the best of the inter-glacial period which happened between 7,000 and 3,000 years ago," he continued.

"Ever since then we have been on a downhill float regarding temperature. There may be a few upward fluctuations from time to time but these are more than offset by the general downward trend."

Lamb said temperatures have been slowly dipping for the last 20 years.

"We are on a definite downhill course for the next two centuries," he said. "The last 20 years of this century will be progressively colder. After that the climate may warm up again but only for a short period of decades."

Lamb said climate changes come in cycles determined by astronomical and physical factors. He said one main cause is the amount of radiation received from the sun.

"We know that the behavior of the sun changes at intervals and these changes have their effect," he said. "The distance between the earth and the sun also varies through the ages as the earth's orbit increases or decreases its elliptical path.

"The tilting of the earth as it rotates around its own axis

also makes the polar ice cap grow, and this affects the air masses around it."

The last great ice age took place about 60,000 years ago and was the sixth in a period of about one million years. The great ice sheets covered most of the British Isles and North America. The ice was at least 5,000 feet thick.

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## India raked by cyclone

NEW DELHI (AP)—A cyclonic storm accompanied by torrential rains slashed through four coastal districts of Orissa State in eastern India Sunday, leaving a trail of death and destruction, official reports reaching here said.

The number of casualties and the extent of the damage was not yet known, officials said. The storm had been predicted and defensive measures were taken.

Last year a storm killed about 5,000 people in the same four districts — Balaore, Cuttack, Puri and Ganjam.

Telecommunications and the water and power supply system in Bhubaneswar district were disrupted, the official reports said.

An official spokesman said about 3,000 people living in huts along the coast were evacuated before the high waves hit the coastline.

*The Windsor Star – September 11, 1972*



Windsor Monday September 11 1972

## East-West snarl over air routes

By NICK HILLS — SNS

VANCOUVER—Two new, prestigious air routes to China and southern Europe have become the centre of another nasty, political struggle between Western Canada and the "power factories" of the east.

Canadian Pacific Airlines, based in Vancouver and considered by westerners to be their airline, believes it is both logic and policy that Ottawa give it both routes—but Air Canada, backed by certain French-Canadian cabinet ministers has other ideas.

The new routes are from Vancouver to Shanghai or Montreal-Peking, and from Toronto and Montreal to Milan. Until just a few weeks ago, it was almost certain that CP Air would get both routes. The airline already flies to Tokyo and Hong Kong while Air Canada has no service in that part of the world. As for Milan, a 1964 policy statement by the then Liberal government gave CP Air the rights to southern Europe. Italy is in southern Europe and Milan is in Italy.

But Jean Marchand, a man not easily understood in the west at the best of times, says it was a mistake to give CP Air the rights to Italy in the first place and it would be unfair now to give the carrier both Milan and Shanghai. He maintains that competition between Canada's two main carriers for new international routes is causing division in the country and the Liberal cabinet.

In fact, until Mr. Marchand spoke out, there was no real feeling in the west about the matter at all. It was presumed that Ottawa would follow both logic and stated policy and award the routes to CP Air.

Now, westerners are becoming increasingly suspicious they are going to get another raw deal from Eastern Canada—and that CP Air will be given China route which won't make money for at least 15 years, while Air Canada will get Milan which will be highly lucrative from the start.

The West's suspicions have been fed by some overt moves by Air Canada to give the impression it wants China. The Air Canada strategy, according to air industry observers is to give way graciously to CP Air on the China service and make it look as though the government airline must be given Milan to even things up.

The whole situation is infuriating executives of CP Air who feel they are already discriminated against by the federal government.

In an interview, CP president John Gilmer made the case for his airline getting both Milan and Shanghai.

On the China route, Mr. Gilmer pointed out that CP Air right now flies from Vancouver to Tokyo and Hong Kong. It would be a simple and logical extension of that service to tack Shanghai on to the end of the line. The Chinese, for their part, were anxious that CP Air get the route, he said, because it would give them direct access to South America, without having to land in the United States.

Right now, CP Air flies to Mexico City, Lima, Santiago and Buenos Aires. If the carrier went into Shanghai, Chinese businessmen and diplomats who have a lot of dealings in Latin America, could fly CP Air from Shanghai via Canada to places like Mexico City and Buenos Aires.

As for Milan, Mr. Gilmer said the 1965 government aviation policy sliced up the world between the two Canadian carriers, and CP was given southern Europe.

"Italy is in southern Europe and to give Air Canada Milan would be a violation of that policy."

"We have never applied for routes in the United Kingdom, Germany or France in recent years because we were trying to abide by that policy."

He also argues it would be economic madness to have CP Air flying into Rome, as it does now, and Air Canada into Milan when only one Italian airline, Ad Italia, has the Canadian market of Toronto and Montreal.

## Russia bares her peek beneath clouds of Venus

MOSCOW (AP) — Some sunlight does penetrate the dense, seething clouds shrouding Venus, and the planet's surface has granite rocks similar to those on earth, Soviet newspapers said Sunday.

The papers carried a detailed summation of data from the flight of Venus 8, which parachuted through Venus's clouds July 22, made a soft landing and transmitted radio signals for 50 minutes from the planet's sizzling surface.

"The key question during the landing of the station Venus 8," the summation said, "was whether the sunlight reaches the surface of the planet or whether it is absorbed completely by the atmosphere and the clouds."

The article said a photometer aboard the landing capsule received data "from the beginning of the descent to the touchdown."

"This unique data," the report continued, "would allow us to conclude that a certain amount of solar rays in the visible part of the spectrum penetrates to the surface of the planet."

The report added, however, that "the Venutian atmosphere considerably weakens the sunlight" the further it penetrates the atmosphere, which is about 97 per cent carbon dioxide, two per cent nitrogen and the rest oxygen, water vapor and ammonia.

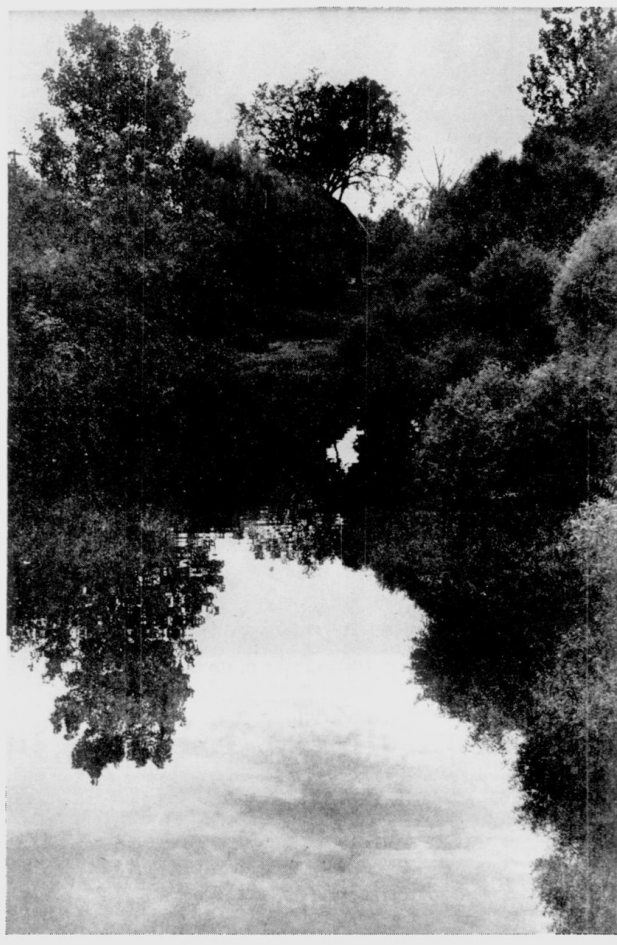


Photo by Walter Jackson

NATURE ON A NEW TRAIN NOW — Summer is a period when nature feels a need for growth that is outrageously—and beautifully—creative. But nature's war against winter's desolation is winding down now, another cycle is ending, and

scenes like this one on River Canard at the 5th Concession in Anderton soon won't be with us. Already the leaves are leaving, the nights are getting cooler, and there won't be much activity in that barn.

## There's a new Ice Age coming!

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## An army of voters with no say

By PETER CALAMAI — SNS

OTTAWA — The diplomat was furious. It wasn't bad enough that he, a Canadian ambassador, couldn't vote in the federal election.

He'd just found out that his chauffeur—an army corporal—could vote under the special arrangements for Armed Forces personnel.

The ambassador burned up the wires to Ottawa. And the only consolation he received was that several hundred thousand other Canadians were in a similar bind—a virtual army of disfranchised voters.

The short-changed citizens were everywhere: fishermen and sailors on the high seas; ordinary citizens working or vacationing outside the country or in remote locations; anyone unexpectedly stuck in hospital or awaiting trial in jail.

Many have now gained their voting rights for the first time because of changes in the elections act, including the first use of proxy ballots in a federal general election.

But the remaining gaps in Canada's election machinery—which pass unmentioned in Liberal party publicity extolling the wider voting rights—mean there's still a fair-sized battalion of disfranchised.

Ironically, the group that gains the most from the modernization of the election act is still the big loser: the students.

Jean-Marc Hamel, chief electoral officer, estimates at least 10,000 eligible citizens studying in the U.S. or overseas will be left out of the action on Oct. 30.

Swelling these ranks are the legions of Canadians either living and working overseas or leaving the country before Oct. 21, the date of the first advance poll.

The only people outside Canada who can vote are civil servants, members of the Armed Forces and the dependents of both categories. Numbering an estimated 102,000, they'll vote from Oct. 16 to 20 to allow time for their ballots to reach Canada, be sorted into ridings and announced, for the first time, simultaneously with the regular election-night returns.

And that means you must be able to prove your place of "ordinary residence," as the electoral officials call it. That's no trouble with civil servants or members of the armed forces; their employer—the government—issues orders that everyone being posted out of the country must fill in the necessary forms.

But it would be tough to make those same rules stick with ordinary citizens or private firms, says Mr. Hamel.

Passports are out as a method of control on several counts: some countries don't require them from Canadians and the holder's home address is not initially verified or double-checked during the five-year valid period for the passport.

"Our present system just can't permit absentee voting without gross abuses," sighs Hamel.

So a parliamentary committee studying updating of the election machinery came up with the next best thing—proxy ballots.

Although this is the first time proxy ballots have been widely used in a federal general election, similar systems have been used in Nova Scotia and Ontario provincial elections. A type of proxy ballot was cast in the 1953 federal election by the wives of about 10 Korean prisoners of war and the new system has been employed in a half-dozen federal by-elections since 1970.

Only three classes of voters are eligible for proxy ballots—fishermen, mariners or prospectors; sick or physically incapable persons and full-time students at an educational institution in Canada.

The rules appear simple, although there's at least three forms which must be filled out before any proxy ballots are cast:

—The elector must be in one of the three categories and must not be able to vote in the advance polls on election day;

—Both the elector and his would-be proxy—who need not be related, or even a friend—must be on the voters list in the same electoral district;

—One of the two must apply in person before the returning officer in their electoral district to receive the proxy certificate;

—If the elector is a student his application to appoint a proxy must be accompanied by a statement from his school registrar; if the elector is sick or physically incapable, a medical certificate is required.

—The proxy voter cannot have been appointed proxy voter for another elector.

All these conditions must be fulfilled—and the proper forms completed—before 10 p.m. on Friday, Oct. 27.

Mr. Hamel wants to play this first proxy ballot exercise fairly cautiously and has issued strict instructions to the 264 returning officers across the country aimed at heading off potential abuses.

He feels his biggest headache will be with students who—if the letter of the law were strictly enforced—should be enumerated at their parents' address because they aren't really living on their own finances at university.

For many students, this procedure would mean surrendering their vote by proxy to their parents, something they're opposed to. To avoid this outcome, most students will probably insist on being enumerated at the school residences.

Mr. Hamel has suggested that graduate students be employed as enumerators in university districts to explain the law to their fellow students.

From refrigerators to super markets the living standard is rising

## New age finally dawning for Greenland's Eskimos

GOLDTHAAB, Greenland (AP) — You'll have to give up that old joke about the smart salesman who sold a refrigerator to an Eskimo.

In Greenland some Eskimos have refrigerators as well as washing machines, garbage disposal, a supermarket around the corner. All were provided in low-rental apartment blocks built by the government.

The Danish taxpayers have been spending \$100 million a year since 1960 to help the 41,000 descendants of the Eskimos of the S one age. And little Denmark, with only five million people, has to pay out that amount every year until 1980.

The government's intention is that the Greenlanders will have a standard of living comparable to that of their fellow

citizens in Denmark. This is a formidable undertaking because Greenland is one of the most daunting areas ever inhabited.

Man first came to Greenland about 4,000 years ago. Its Scandinavian links go back 1,000 years to the landing of the Norsemen led by Erik the Red on the southern tip. Erik gave it the misleading name in the hope of attracting other settlers.

Greenland is the world's largest island. Its 840,000 square miles make it more than two times the size of Ontario. All except one-sixth of the area is permanently under an icecap nearly two miles thick. Dunes like to frighten visitors with the calculation that if the ice melted the oceans would rise 24 feet.

Only the 24,000 miles of coastal fringe is habitable. Even there human existence can be precarious with temperatures as low as 94 degrees below zero in the north and wild gales in the south during the six months of winter.

Until 1953 Greenland was virtually closed to the outside world, to protect the Eskimo culture. Then it was proclaimed an integral part of the Kingdom of Denmark. Policies had to change when it became obvious Greenlanders could no longer exist in the traditional way as hunters of seal, walrus, polar bear and arctic birds from sealskin kayaks.

One in three Greenlanders died of tuberculosis and the life expectation was 32 years. Tuberculosis now has been conquered.

A successful health program brought about a population explosion.

In 1921 the population was 21,000. Now it is 48,000, including about 7,000 people from Denmark.

An enormous modernization program was needed to provide work and housing. The fishing fleet was expanded, modern apartment blocks constructed in the west coast townships with ice-free harbors.

The Danes cheerfully shouldered the cost, although there is criticism of methods. Moving of people from hunting settlements to towns is controversial. Uprooted from the traditional ways, many Greenlanders fell for the temptations of civilization. Alcoholism and venereal disease are problems and there has been an increase in crime.

# International Team of Specialists Finds No End in Sight to 30-Year Cooling Trend in Northern Hemisphere

An international team of specialists has concluded from eight indexes of climate that there is no end in sight to the cooling trend of the last 30 years, at least in the Northern Hemisphere.

**The New York Times**

Published: January 5, 1978

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[International Team of Specialists Finds No End in Sight to 30-Year Cooling Trend in Northern Hemisphere – View Article – NYTimes.com](#)

*"Equipo internacional de especialistas no ve el final a la tendencia de 30 años de enfriamiento en el hemisferio norte"*

The Canberra Times (ACT : 1926 - 1995) (about) ◀ Saturday 31 May 1975 ▶



## **THE ICE AGE COMETH**

Some scientists believe a new Ice Age is on the way. Others insist that it has already begun and they have marshalled some chilling facts to support their argument. All in all, the prospects are enough to make your blood run cold as you'll discover in tomorrow's Sun-Herald.

[The Canberra Times – May 31, 1975, p.5](#)

*"La Llegada de la edad de hielo"*



# Weather Forecast For the Future:?

By ALAN ANDERSON Jr.

A number of climatologists, whose job it is to keep an eye on long-term weather changes, have lately been predicting deterioration of the benign climate to which we have grown accustomed. They point to signs both great (a steady global cooling trend since World War II) and quaint (the southward retreat from Nebraska of the warmth-loving armadillo) to support their claim that the coming years will feature colder, more erratic weather. Some recent warnings, from reputable researchers in Japan, Europe and the U.S., have so worried policy-makers that last January certain scientists at a meeting of the National Academy of Sciences proposed the evacuation of some six million people from their parched homelands in the Sahel region of Africa.

years, they were battered by flooding, midsummer drought, and late frost. The harvest of cereals (corn, oats, barley and rye) fell from 187 million tons in 1973 to 167 million tons in 1974. Food supplies increased only a little by export and sea harvests. Most of the world's tillable land is already under irrigation, and fish and shellfish catches are being hauled in at rates near replacement. "A major change," reports a panel of the National Academy of Sciences, "will require economic and social adjustment on a worldwide scale."

Food shortages in themselves are a complete surprise; some experts have been predicting them largely on the basis of population growth, since the time of Malthus. The idea that such shortages could be caused by deteriorating climate is a relatively new —and far more



A 1965 satellite photo showing the first complete view of the world's weather. Clear air (1), a rainy frontal zone (2), a low pressure zone (3), tropical storms (4, 5), and a typhoon (6).

## Views

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At the same time, as anyone who watches the television weatherman knows, meteorologists are hard-pressed to predict the weather as much as five days in advance. A group of scientists, using the world's largest computer to simulate atmospheric behavior, still considers a two-week forecast only "an exciting possibility." How, then, can anyone propose a doomsday scenario spanning years and even decades?

The discrepancy turns out to be more than a simple matter of scale. Climatologists, who study past climatic variations hundreds or even millions of years in duration, claim that they know a trend when they see one. Meteorologists, who are trying to understand the complex workings of the atmosphere on a minute-by-minute basis, protest that, without a better understanding of basic atmospheric physics, such long-range predictions are "just unsubstantiated hand-waving."

The dispute is of more than academic interest. Even slight climatic changes can force abrupt changes in agricultural patterns; the 1 degree centigrade drop in the annual average temperature worldwide has shortened the growing season in England, for example, by two weeks and caused permafrost to advance southward in Russia and Canada. Poorly understood shifts in high-altitude winds in 1972 are thought to have produced flooding along the eastern seaboard of the United States, irregular monsoon behavior in Asia, and drought in the Ukraine—all at once. During the same year, the mantle of polar ice increased by 12 percent over previous years, and has not returned to its "normal" size. Sea temperatures in the North Atlantic have dropped, shipping lanes are cluttered with abnormal amounts of ice, and the Gulf Stream has retreated slightly southward.

Climatologists see this cooling as part of a trend—one that will surely lead to more erratic weather and so to food shortages. They do not fear the sudden advance of glaciers over our farms and cities; such an onslaught would take thousands of years to develop. They warn, rather, of long-lasting changes in rainfall and temperature around our croplands, and of heating or cooling of sea water in areas of high nutrient production. The heavy grain surpluses of the nineteen-sixties have shrunk away almost overnight, so that crop failures in one of the world's crucial "breadbaskets," such as the wheat-growing region of the Ukraine, can produce high food prices and shortages worldwide.

This year, even the rich American Midwest took its lumps, just as farmers were hoping to make up for recent shortfalls. Even as grain growers sought to gain back losses of recent

years, they were battered by spring flooding, midsummer drought and early frost. The harvest of coarse grains (corn, oats, barley and rye) fell from 187 million tons in 1973 to 150 million tons in 1974. Food supplies can be increased only a little by expanding land and sea harvests. Most of the world's tillable land is already under cultivation, and fish and shellfish stocks are being hauled in at rates near the limit of replacement. "A major climatic change," reports a panel of the National Academy of Sciences, "would force economic and social adjustment on a worldwide scale."

Food shortages in themselves are not a complete surprise; some agricultural experts have been predicting them, largely on the basis of population growth, since the time of Malthus. But the idea that such shortages are being caused by deteriorating climate is relatively new—and far more fearsome. Perhaps the most outspoken and oft-quoted climatological doomsayer is Reid Bryson, director of the Institute for Environmental Studies at the University of Wisconsin. "It would appear," Bryson said recently, "that we are at the end of an era—the era of food surpluses and the era of benign climate." Bryson, a folksy, lachrymose man given to heavy irony, has been playing the role of climatological Jeremiah since the faint postwar cooling trend became discernible in the nineteen-sixties.

Most climatologists confine themselves to the search for patterns of past climatic changes. Bryson, more daring, is one of the few who are willing to make climatic predictions. Drawing largely upon the work of others (no single researcher could hope to carry out all the individual research projects from which a generalized theory must be assembled), Bryson warns that "the climate of the earth is changing and is changing in a direction that is not in the interest of our ability to feed the world." Bryson argues that man, through industrial and agricultural activities, has been "stirring up the dust" at a sharply increasing rate since the nineteen-thirties. This dust, he says, is gradually reducing the amount of sunlight reaching the earth, especially in the northern hemisphere.

The effects of this solar screening might be slight, according to the theory, except for a key accomplice: a great skirt of whirling cold air known as the circumpolar vortex. This gigantic current of westerly winds, including the jet stream, rotates around the North Pole like a full skirt draped over much of the northern hemisphere. This "skirt" carries around its hem five to eight "folds" of alternating high and low pressure that reach into the United States, northern Africa, southern Asia, and so on around the world.

Normally, the circumpolar vortex expands in winter and retracts in summer. Bryson and some of his colleagues contend that in recent years the thickening atmospheric dust has caused the vortex both to grow abnormally in the winter and to recede less in the summer. Because cold air is heavier than warm air, the cold polar vortex may block the normal warm-air storms such as the monsoons that bring life-giving rains northward each summer to the sub-Saharan Sahel region of Africa and to most of southern and eastern Asia. Bryson theorizes, for example, that in 1972, a year of widely erratic weather, the high and low pressure "folds" of the polar vortex "skirt" were abnormally arranged in such a way as to cause, simultaneously, drought in Africa, floods in the eastern U.S. and drought in the midwestern U.S.

As long as man continues to put dust into the air, says Bryson, the circum-

polar vortex will remain swollen, leading eventually ("sooner than you would think") to the deterioration of our climate. And he sees no way to avoid this fate. "You cannot turn off all industry, all mechanized agriculture, clean up every smokestack, tell all of the primitive farmers of the Congo and Southeast Asia to stop burning slash to clear new fields. I once saw a plume of smoke particles over Iceland that extended all the way from New York City. There is probably no way we can stop people from putting all this dust into the air. You tell people to stop doing things the way they have always done them, and they just look at you. I suppose I ought to stop worrying about whether people stare to death or not."

Bryson and a group of fellow climatologists met last summer in Bonn under the auspices of a group called the International Federation of Institutes for Advanced Study and issued a statement that startled many of their colleagues. It read, in part: "The facts of present climatic change are such that the most optimistic experts would assign near certainty to major crop failures within a decade. If national and international policies do not take these near-certain failures into account, they will result in mass deaths by starvation and probably in anarchy and violence that could exact a still more terrible toll. . . . We are aware of differences among experts as to the cause-and-effect relationships of observed climatic facts and, consequently, but they do not—and should not be allowed to—obscure the larger consensus that the observed changes are neither trivial nor ephemeral."

The Bonn statement caused an uproar, and its strong wording was subsequently softened; a number of climatologists and meteorologists also took issue with the "consensus" it described. Prof. Mikhail Budyko of the Soviet Hydrometeorological Service, for one, discounts the significance of the recent cooling trend and warns that over a longer term the climate has actually been getting warmer because of human activities, particularly the burning of fossil fuels, and that the sea level will soon rise dangerously as the Antarctic and other ice caps melt.

Researchers at the Geophysical Fluid Dynamics Laboratory in Princeton, N.J., one of the world's few groups testing sophisticated numerical models of the atmosphere, object that dire and sweeping forecasts are being made in the absence of any real understanding of what causes climatic change. One Princeton researcher, Syukuro Manabe, recently dismissed such predictions as "hand-waving"—lacking in supportive data.

"If you speak out too loudly every time you suspect the cause of something, people won't listen to you after a while. We are talking about man's impact on climate, but nature has been causing trends such as ice ages all by herself for thousands of years," Joseph Smagorinsky, director of the laboratory, agrees: "There are all sorts of natural climatic cycles we don't understand yet. One man's trend is simply another man's periodicity—it is just a question of whether you are using a telescope or a microscope. To go directly from a hand-waving hypothesis to contingency plans for moving six million people is a little highbrow."

Another prominent dissenter is Jule Charney, professor of meteorology at M.I.T. "I don't think we can predict climate now and I wouldn't trust anyone who said he could. The atmosphere is just too complex to take some of these vague statistics and try to use them to predict with. You can always find a single physical mechanism that will 'cause' one thing or another, but when you take them all together, it just gets too complicated. Worse yet are those 'weather forecasters' who say that they can predict the weather months in advance. Anyone who says he can tell you more than a few days ahead of time what the weather is going to be is practicing necromancy."

The skepticism of those who criticize Bryson's theory was reinforced last

summer when, inexplicably, the six-year drought in the Sahel was broken. Smagorinsky, among others, mistrusts any theory that attempts to explain or predict drought on the basis of a single factor, such as increasing dust in the atmosphere. Manabe agrees, adding the drought is much too "ricky" a question. "If we had all the data from all the oceans and deserts around the drought area for those years, and we could compare them with a non-drought period, we could look for a significant difference. But we don't have the data."

At the most fundamental level, climate may be defined as the average of weather conditions—temperature, winds and precipitation—over a period of time. It is caused by the invisible motions of nitrogen and oxygen molecules, as well as those of less abundant materials such as water vapor and carbon dioxide, that make up our turbulent atmosphere. The heat energy to move the air molecules, and consequently, to cause weather, comes from the sun—a constant 23 trillion horsepower. About a third of this radiation is reflected back into space by clouds or light-colored patches of land; the rest is absorbed by the atmosphere or the ground and converted to heat.

The laws governing energy and motion—Boyle's law, Newton's laws of motion and the first law of thermodynamics—have been understood for over a century. Therefore, the movements are predictable—in theory. In practice, the molecules that do the work of weather are so numerous, and their activity so interrelated, that the equations governing their movements are extremely elaborate. As sunshine, wind and other conditions change in one region, the behavior of molecules in an adjacent region is altered, and meteorologists must continually update their calculations. In 1922, when English theorist Lewis F. Richardson ca. he up with the first numerical theory for global weather prediction, he labored for six weeks with a desk calculator to make a single (unsuccessful) 12-hour forecast. Richardson estimated that he would need a cast of 64,000 mathematicians punching away 24 hours a day to keep up with world weather.

At the same time, it is possible to understand the behavior of weather in a general way. More than half of the atmosphere's heat is generated in the tropics; because of the earth's spherical shape, sunlight strikes the equator more directly than the poles. The air warmed by the sun is likened to the boiler that drives the planet's atmospheric engine. The "exhaust" of the heat is generated in the equator toward the poles—about a third of it carried by warm ocean currents and two-thirds by moisture-laden winds. From the temperate and polar regions this excess heat is reradiated into space; if it were not, the atmosphere would quickly heat up and the oceans would begin to boil.

If the earth were a smooth, motionless globe, the atmospheres of both the northern and southern hemispheres would behave as individual circulation cells, each resembling air in a room heated by a radiator along one wall. The air warmed by the radiator rises along the wall, moves along the ceiling toward the center of the room, sinking the floor as it cools, and then moves back toward the radiator along the floor. However, the earth is neither smooth nor motionless. The simple cell of air circulation actually takes the form of three linked cells. Mountains interrupt the flow of air, and the planet's eastward rotation skews the poleward movement of air so that it does not reach the poles fast enough to dissipate the excess energy. However, eddies form next storm systems, which are super-efficient transporters of heat to the poles. Additional energy is released in other ways, such as precipitation. The raw material for rain, water vapor, is evaporated from the water by solar energy, mostly in the tropics. These molecules of gaseous water, which carry latent energy, cool as they rise and move poleward. As they cool, the molecules tend to clump together in drops—releasing heat energy that was absorbed in the tropics during evaporation, and producing rain. (The formation of clouds

and rain is still poorly understood, as is indicated by our continuing lack of rainmaking skills after decades of intensive research.)

Additional energy is expended as wind in the form of hurricanes, fronts, cumulus convection, tornadoes, the jet stream and clear air turbulence. Processes such as these are responsible for about 75,000 thunderstorms a day around the world.

There is little hope of comprehending these processes without learning more about the tropical heat engine. The tropics are largely a meteorological blank spot, both because they are sparsely populated and because most equatorial countries are too poor to afford expensive weather programs.

Last summer, however, the first giant step was taken to learn something about equatorial weather. Meteorologists from 72 countries swarmed across the Atlantic for 100 days, bearing sensors in ships and aircraft for the first full-scale experiment of GARP, the Global Atmospheric Research Program, under the auspices of the United Nations. Adding their experimental information to the regular data from 9,000 land stations, more than 6,000 daily reports from ships and 24-hour worldwide satellite surveillance, scientists sought to correlate oceanic and atmospheric conditions with observed weather. To the extent that they have increased understanding of the tropical heat engine, "the early results are amazing," says Dr. Charney. "They're beyond my expectations—and I suggested the experiment in the first place." Similar experiments are planned to study the Asian monsoon, the polar region, and, as a grand finale in 1978, the entire globe.

In 1946, famed computer pioneer John Von Neumann saw the value of high-speed computing for meteorology and began to assemble a group of brilliant young scientists at Princeton University. Using a machine known as the MANIAC (for Mathematical Analyzer, Numerical Integrator and Computer), Von Neumann's group in 1950 made a first—and wildly successful—computer run of their model. The later tests revealed inadequacies—according to one account, the computer once forecast a blizzard for Georgia in July.

Since then, computers and models alike have grown steadily more sophisticated, computer simulation remains an expensive and arcane specialty. Foundational and applied meteorologists, including U.C.L.A.'s Rand Corporation, the National Center for Atmospheric Research in Boulder, Colo., England's Meteorological Office and Princeton, where the descendants of the original group have continued Von Neumann's work. Now founded by the National Oceanic and Atmospheric Administration, the Princeton group is using the world's largest and fastest computer to an Advanced Scientific Computer made by Texas Instruments.

For purposes of numerical simulation, the earth's entire atmosphere is divided into boxes extending several hundred kilometers on a side and a kilometer or so in depth. A typical model may deal with 60,000 of these boxes. The computer is fed information about the boxes and about the basic laws of physics. It is then asked to compute on the basis of these laws, what will happen to the molecules in each of the boxes as temperature, humidity and wind speed change in neighboring boxes. In other words, it is asked to predict the weather over the world, and to repeat this prediction every five minutes or so for as long as the model holds together.

The accuracy and range of the prediction obviously depend upon the reliability of the data and the model—and perhaps upon some intrinsic limits not yet understood. "We're now using five-day forecasts," says Donald Gilman, head of the long-range forecast division of the National Weather Service. "The consensus is that these models may let us see 10 to 14 days ahead for our daily predictions, although estimates range from one to four weeks. We are appreciably more accurate than we were 20 years ago, but it may be difficult to go on from

here. That's one of the things the Global Atmospheric Research Program is designed to tell us how much further we can expect to get. These models are very sensitive to little disturbances. If you give the model any sort of random kick, such as an error in wind speed, on day one the results you get three months later are very, very different from what you get without the kick. It will be very difficult to distinguish small but real atmospheric disturbances from random background 'noise'."

Instead of aiming at specific predictions, therefore, numerical modelers seek to ignore the tiny kicks, and even eddies as large as hurricanes, in their search for the causes of climatic change. In fact, the theoreticians are looking beyond the atmosphere itself, exploring the oceans, the permanent ice cover and other elements of the earth's surface that change more slowly than the ephemeral atmosphere. The entire atmosphere may react to a change (such as a reduction of sunlight) in weeks, but the upper layer of the ocean may take months or years to react, the deeper ocean centuries, and the permanent ice cover (representing the bulk of the world's fresh water) hundreds to millions of years. Such slow-changing systems act as a kind of climatic "flywheel" on the atmosphere, damping most climatic oscillations before they become extreme. "There seems to be some kind of system with longer term fluctuations than the normal daily and seasonal weather we can observe," says Dr. Gilman. "It is probably not the sun—we have looked for a simple relationship there without any good results. The nature of this atmospheric flywheel is going to be the topic of lively debate in the next few years."

Once numerical modelers can simulate the workings of the atmosphere, the ice flywheel, they hope to be able to predict the results of specific changes, such as sudden, dust-producing volcanic eruptions or overgrazing of arid regions.

Both numerical modelers and climatologists agree that any attempts to alter climate would be foolhardy in the light of our rudimentary understanding of why climate changes. Russian scientists, for example, have proposed several scary schemes, such as diverting large Siberian rivers, melting Arctic ice, and damming the Bering Strait—all to gain regular weather in the frigid fringes of the Soviet Union. Suppose the Russians really believe they can halt the southward movement of permafrost? "I certainly hope they don't try it, because nobody knows," says Bryson.

Climate researchers are haunted by the possibility that they will always have to play with elliptical pool balls—that climate varies so irregularly as to be inherently unpredictable. During moments of gloom, weather scientists compare themselves to economists, whose efforts at prediction have been notoriously unsuccessful. "Atmospheric instabilities," says Kikuro Miyakoda of Princeton, "seem very similar to economic instabilities in many ways. The economy of the entire world can be influenced by a few words from the president of one country. Fortunately, we think we are a little better off than this."

Joseph Smagorinsky prefers to believe that modeling may lead to good climatic prediction—eventually. "Climatic models won't use the same information as our short-term models. It isn't possible to follow all the details of weather. We shall be looking for the broad changes, trying to compute what will happen if we change the CO<sub>2</sub> content of the atmosphere. . . . We're now using five-day forecasts," says Donald Gilman, head of the long-range forecast division of the National Weather Service. "The consensus is that these models may let us see 10 to 14 days ahead for our daily predictions, although estimates range from one to four weeks. We are appreciably more accurate than we were 20 years ago, but it may be difficult to go on from

Alan Anderson Jr., a freelance science writer, refuses to make any predictions.



# Climatologists Forecast Stormy Economic Future

By JAMES P. STERBA

Special to The New York Times

ALBUQUERQUE, N.M.—It was supposed to have been just a brief chat. Nelson Bunker Hunt is a busy man. But the Dallas man, who is a millionaire many times over, became so intrigued with what Iben Browning had to say about climate shifts that he spent the whole day listening.

"The ramifications of what he says are pretty startling," said Mr. Hunt. "I never thought about climate before, but now I think about it all the time."

A lot of other people are doing the same. The weather seems to have gone berserk lately. The tennis courts at Wimbledon in England have not been as parched since the 1920's. The same is true for croplands in northern France, the Soviet Union, Minnesota and the Dakotas. It's so dry, brush fires have started several weeks early in California, and water is being rationed.

As a result, Dr. Browning and other previously ignored climatologists are getting a lot of attention. Projections that they made years ago appear to be coming true.

They believe that the earth's climate has moved into a cooling cycle, which means highly erratic weather for decades to come. And that, they say, has profound implications—most of them bad—for world food production, economic stability and social order. With the world's population now so high, the results of even minor year-to-year shifts in climate could be catastrophic, they say.

## Skeptical Scientists

Some scientists think all that is nonsense, mainly because climatologists can offer no scientific proof to back up their theories. If meteorologists, using sophisticated computers, can forecast weather only a day or two in advance, they ask, how can climatologists project climate years ahead?

"It's interesting," said one skeptical scientist. "But some of their stuff is right out of fantasy land."

However, big investors and intelligence analysts are paying serious new

Continued on Page B9, Col. 2

[Climatologists Forecast Stormy Economic Future – Climatologists Forecasting Dire Effects of Weather on World Economy and Social Order – View Article – NYTimes.com](#)

Dr. James D. Hays of Columbia University, leader of the scientific team, called

But a moderate cooling trend has already begun, Dr. Hays said, adding:

"If you project the relationship between the orbits and the climate in the future, this cooling trend should continue for on the order of 20,000 years. In that length of time I think there is not much doubt that we will build substantial ice on the Northern Hemisphere continents."

**The New York Times**

Published: November 30, 1976

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[ICE AGES ATTRIBUTED TO EARTH ORBIT SHIFT – Scientists Find Periodic Changes in Path Around Sun 'Positive Test' of Climatic Theory – View Article – NYTimes.com](#)

"...una tendencia al enfriamiento moderado ya ha empezado, .."

"esta tendencia al enfriamiento debería continuar durante 20.000 años"

# Believe new ice age is coming

By GLENN D. EVERETT  
Times

Washington Correspondent

WASHINGTON — The warm days of spring may be coming, but those gloomy fellows are back again who warn us that we'd better enjoy it while we can.

A group of scientists meeting under auspices of the National Science Foundation have again come up with a warning that the world may be nearing the end of the present inter-glacial period and that the Arctic ice sheet has begun what may prove to be another relentless advance over northern North America and Europe.

The last glacier covered what is now Williams County with a sheet of ice that may have been as much as one mile thick at its height.

Further, it was the fourth consecutive glacial period in less than a million years, to leave its indelible record behind.

The 46 scientists who gathered at Brown University, Providence, R. I., for a symposium on "The End of the Present Interglacial" agreed that there is evidence of an ominous world-wide cooling of temperatures in the past two decades.

maximum warmth between glacial ages have been short, according to his studies — less than 10,000 years long.

"This conclusion is of immediate concern," he declared, "because the present warm interval has already lasted close to 10,000 years."

Prof Emiliani and several of his associates presented evidence that world temperatures reached a peak about 6,000 years ago, which was just about the time the last vestiges of the glacier melted away from the Great Lakes basin.

Dr. J. T. Andrews of the University of Colorado said that the Arctic has been getting cooler since the 1940's and that year-round snowbanks now cover areas of Baffin Island that were free of snow in the summer when the island was first explored.

A visiting scientist, Prof. Vojen Lozek of the Czechoslovak Academy of Science, said his study of a temperature-sensitive warmth-loving snail shows that its range is moving steadily southward in the central European mountains.

Dr. Herbert E. Wright, Jr., of the University of Minnesota said hardwood forests are beginning to intrude on the

the earth enough to start the glaciers on the move.

Others feel that volcanos which expel great clouds of dust into the atmosphere cut down on solar radiation enough to trigger the process.

All agree that the temperature of Mother Earth is so delicately balanced that only a small shift, as little as 4 degrees Centigrade, or 7 degrees Fahrenheit, can start the ice build-up.

Once started, the process becomes a vicious cycle. When areas that are now green in summer become covered permanently with snow, then a lot more of the sunlight is reflected back, and the ground absorbs less heat. This cools the area further and the snow line gradually extends farther and farther south.

The same is true with ice in the sea. And the scientists noted that the pack ice between Iceland and Greenland is much more of a handicap to navigation than it was a few years ago.

One comforting thought is offered: As the ice builds up and covers the land, more of the world's water supply is trapped in that ice and sea level drops. Areas now covered by

*The Bryan Times — March 31, 1973*







# *Problems From Climate Changes Foreseen in a 1974 C.I.A. Report*

HOUSTON, Jan. 31—In August 1974, researchers at the Central Intelligence Agency completed a classified 36 -page working paper, entitled "A Study of Climatological Research as It Pertains to Intelligence Problems." In it they reported, "Leaders in climatology and economics are in agreement that a climatic change is taking place and that it has already caused major economic problems throughout the world."

"The new climatic era brings a promise of famine and starvation to many areas of the world," the C.I.A. study said. "The resultant unrest caused by the mass movement of peoples across borders as well as the attendant intelligence questions cannot be met with existing analytical tools."

Since then, the economic, social and political disruptions caused worldwide by energy shortages have been well documented. The drain on world oil and natural gas reserves, and the attendant price rises, have caused economic hardship around the globe. Unusual weather patterns have exacerbated those hardships.

[\*Problems From Climate Changes Foreseen in a 1974 C.I.A Report – View Article – NYTimes.com\*](#)

CENTRAL INTELLIGENCE AGENCY

DIRECTORATE OF INTELLIGENCE  
OFFICE OF POLITICAL RESEARCH

August 1974

and hence less rain. Inland on the Eurasian and other large land masses, north-south swings of the polar front (the edge of the great polar air mass) will tend to dominate the weather picture more than in the recent warm period.

\* *The main temperature change seems to be in the summer, where mean arctic temperatures have dropped 0.5° C. (nearly 1° F.) giving an increased pole to equator gradient of 0.1° C. (almost 0.2° F.) per 1000 kilometers. This would, according to the theory, lower the latitude of the sub-tropic high by more than 30 miles.*

--China would be hit by both cooling in the north and monsoon failures in the south.

Moreover, in periods when climate change is underway, violent weather--unseasonal frosts, warm spells, large storms, floods, etc.--is thought to be more common. The change itself would not be smooth, and even if the drop in temperature were slow, the disruptive effect of violent weather on crops might be considerably more adverse than mere cooling. But

*Potential Implications of Trends in World Population, Food Production, and Climate*



From about 1945 we have been returning to a time when polar air is more dominant, a time more like the period from A.D. 1200 to 1400 and from A.D. 1600 to 1900. The average temperature of the Northern Hemisphere has declined nearly as much as it rose in the first part of our century. The growing season in England has diminished by two weeks. The frequency of droughts in northwest India has begun to increase. The Soviet Union is experiencing successive years of trauma in its agriculture.

Climatic theory is not now sufficiently developed to give a definitive prediction of what the immediate future holds for us—in fact, whether this cooler regime will continue. However, the records show that such coolings in the past millenium lasted not less than 40 years, nor has the hemispheric climate returned to the original state in less than 70 years. Thus, it would appear that the coming decade will be either like the last few years, or cooler. It will not be like the unusual 1931-1960 warmer period.

The last few years saw the following: In 1972 and in 1974 crop losses caused by climate, weaker monsoons in India, a monsoon failure in West Africa, drought in the Soviet Union, and climatic abnormalities that shook and are shaking the confidence of North American agriculture.

[...That's the News. And Now for San Juan's Weather... – View Article – NYTimes.com](#)

## Science

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### *Worrying About a New Ice Age*

**The New York Times**

Published: February 23, 1969

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[Science – Worrying About a New Ice Age – View Article – NYTimes.com](#)

# Geologist Says Winters Getting Colder

By RICK VAN SANT

CINCINNATI (UPI) — You may as well get used to the bitter cold weather now plaguing much of the nation because winters are going to get colder gradually throughout your lifetime, a geologist says.

"It doesn't look good, not in our lifetime, and it's going to be even worse for future generations," said Madeleine Briskin of the University of Cincinnati, who specializes in researching long-range weather cycles.

"We're entering a 'Little Ice Age' and it's my opinion we could have glaciers moving into the northern part of America in 1,000 years."

While the thought of a glacier possibly swallowing Cleveland 10 centuries from now is worth pondering, most people are more interested in knowing if they're going to shiver through winters the rest of their lives.

"Generally, in the immediate future we're going to have more severe winters and cooler summers," Ms. Briskin said. "There probably will be some variation — it might get slightly warmer one winter — but we should not be deceived by these variations. Overall, it's going to get colder."

Ms. Briskin says nothing has gone "wrong" with the weather, it's just that we happen to be living during a cold cycle.

"Research has shown there are repetitious cycles of weather, so extremely cold winters are not unusual, it's just another cycle coming around."

"Temperatures rose from the turn of the century until around 1940 when the cycle began to reverse. Now we're having less arctic ice melt and we're having a systematic displacement of arctic air southward."

As a result, winters not only will be colder, but longer, Ms. Briskin said.

"We're getting to the point where we may start losing a month of so-called autumn weather," she said.

Although there are several theories on what controls overall weather cycles, Ms. Briskin believes astronomical variations relating to the orbit of the earth and the tilt of the axis are the "ultimate causes."

"Even though the theories on the cause may vary, almost all my colleagues agree we're entering a cold phase," added Ms. Briskin. "Coupled with energy problems and dwindling natural resources, this colder weather could create a really tragic situation unless people become aware of it and something is done at the government level."

Middlesboro Daily News – January 16, 1978

*"Geólogo dice que los inviernos se están volviendo más fríos"*

## ZOOHIES



## Geologist Says Winters Getting Colder

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## HEALTH

Lawrence E. Lamb, M.D.

## Caffeine only part of story

By Lawrence Lamb, M.D.

DEAR DR. LAMB — I have been using two different decaffeinated brands of coffee. Recently, a friend told me that when the caffeine is removed something else is used to replace it that can cause cancer. Is this true?

I've seen TV commercials stating doctors say it's okay to drink decaffeinated coffee. So, I am quite concerned if I should continue to drink decaffeinated coffee or not.

DEAR READER — You can forget about the cancer problem in relation to decaffeinated coffee. A few years ago, some of the decaffeinated products were made using trichloroethylene, a chemical related to vinyl chloride, as a degreasing agent. It was found that large amounts of this chemical distilled in the stomachs of mice with a gastric tube might cause cancer in some strains of mice.

You need to know that some mice are particularly susceptible to cancer and others are more resistant. The amount of chemical used was comparable to a human drinking 50 million cups of decaffeinated coffee a day, which I think most reasonable persons would consider somewhat unrealistic.

Nevertheless, the companies using the chemical as a degreasing agent stopped using it entirely rather than fight the hysteria I would like to emphasize that not one case of liver cancer or other cancer in human beings has ever been shown to be caused by drinking any amount of decaffeinated coffee. So, if it is fear of cancer that concerns you about drinking decaffeinated coffee — fear no more, and drink up.

I have a somewhat different opinion about advising everyone who cannot tolerate coffee well to switch to a decaffeinated brand. Despite the TV commercials, caffeine is only part of the story. The flavor oils and other chemicals in coffee are irritating to some sensitive people. These people who continue to have digestive complaints may find that stopping all forms of coffee is necessary to get the best results.

I am sending you a copy of The Health Letter number 1-1, (Coffee, Tea, Cola, Cocoa), to provide you with more information on coffee and other caffeine-containing beverages. Others who want this issue can send 50 cents with a long, stamped, self-addressed envelope for it to me in care of this newspaper, P.O. Box 1551, Kinkaid City Station, New York, NY 10012.

DEAR DR. LAMB — I am writing in regard to your column on improved heart valve surgery. The advice and explanation you gave to the person was right on. I had rheumatic fever several times as a child, and was to the point I was unable to do anything.

I had the mitral valve replaced 15 years ago. Since then, it's been like the good Lord handed me a whole new life. I raised two children, I do all of my housework, bowl, dance and I'm a part-time nursing assistant in geriatrics.



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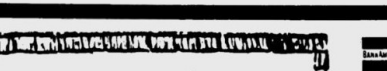
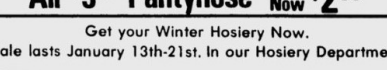
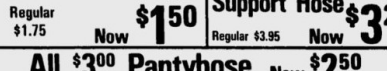
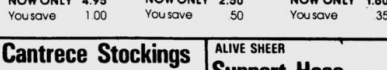
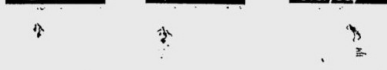
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# Little Ice Age Predicted For Britain

LONDON (UPI) — **Hubert Lamb**, an official long-range weather forecaster, said Wednesday Britain may be heading for a "little ice age."

Lamb, a member of the meteorological office team that produces Britain's monthly weather forecasts, wrote in the magazine *Discovery* that records going back to the year 800 indicate the weather has an 800-year cycle.

He said after the 12th century the weather deteriorated and reached its worst in the 16th century, when most of Europe suffered from harsh winters and wet summers. In the 17th century it began to warm up and reached its best about 1900.

The past two cold winters may be the first signs of another long-term decline in Britain's usually mild climate, he said.

*The Deseret News – January 30, 1964*

# THE WEATHER

Salt Lake City—Continued smoky.

Utah—Chance of snow northwest.  
(See weather map, details on Page B-16)

# DESERET NEWS

## Salt Lake Telegram

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VOL. 361 NO. 26 SALT LAKE CITY, UTAH

THE MOUNTAIN WEST'S FIRST NEWSPAPER, AND 1962 PULITZER PRIZE WINNER, NOW IN ITS 114TH YEAR

THURSDAY, JANUARY 30, 1964 10c



Leaving Salt Lake City Thursday for a visit with President Johnson are President N. Eldon Tanner, David Lawrence McKay, and President David O. McKay of The Church of Jesus Christ of Latter-day Saints.

## Pres. McKay Wings For Visit With LBJ

President David O. McKay of The Church of Jesus Christ of Latter-day Saints left Salt Lake City Thursday morning for Washington, D.C., and a visit with President Lyndon B. Johnson.

It was President McKay's first out-of-state trip in four months—"too long a time," he said.

## Montana Expert Discovers Vaccine For TB

MISSOULA, MONT., (UPI)—A research institute director at Montana State University Wednesday announced discovery of a tuberculosis vaccine made from an extract of the cell walls of the TB organism that may have the potential for halting the disease.

Dr. Carl L. Larson, 54, director of the Stella Duncan Memorial Institute at MSU, will present his findings before the U.S. Public Health Service (USPHS) in Washington, D.C., this week.

His discovery marked a nine-year search that started when he was director of the Rocky Mountain Laboratory of the USPHS in Hamilton, Mont., and continued when he moved to the MSU campus in 1952.

Dr. Larson has been conducting his TB research in conjunction with Dr. Edgar Ribi of the Rocky Mountain Laboratory. Long experiments with the cell walls extract as a useful fighting tool had led to disappointment, Larson said, until he got on the idea of breaking up the organism in mineral oil.

## Racial Clash Hits Cleveland

CLEVELAND, OHIO (UPI)—A wild crowd of several hundred persons beat two Negroes, shoved newsmen and photographers, and threw bottles, fruit, and eggs in a school integration dispute Thursday.

Police formed a cordon to keep the crowd out of the Murray Hill School where bus loads

of Negro children were taken to classes. The demonstrations began Wednesday when white residents of the area objected to transferring Negro pupils from an overcrowded school into a "white" school area.

Eggs, grapefruit and bottles were thrown at a priest and a Negro priest went to a parking lot where a white priest was attempting to lead the crowd. Police said two Negroes, Clarence Brown, 31, and Leroy Fae-B. Levenson and his assistant, 22, were beaten by the George Tusheled, went inside the crowd. The two men said they were building, where Negro children went to the school to protect them were in classes. Other school officials were in their children.

### Today's Thought

Frugality is a fair fortune; and habits of industry a good estate.

—Benjamin Franklin

## Russ Announce Satellite Twins

MOSCOW (UPI)—The official Soviet news agency Tass said Thursday Russian scientists have put into orbit "a space system" containing two scientific "stations."

"In the U.S.S.R. today a space system—two scientific stations—Elektron-1 and Elektron-2—have been put by one powerful carrier rocket into essentially different artificial earth satellite orbits."

The Soviet launching came one day after the United States placed a 37,700-pound satellite into orbit from Cape Kennedy, Fla.

## Little Ice Age Predicted For Britain

LONDON (UPI)—Robert Lamb, an official long-range weather forecaster, said Wednesday Britain may be heading for a "little ice age."

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# Bloodless Coup Ousts Viet Nam Army Junta

## Ranger On The Way

## U.S. Parks, Restarts Moon Probe

CAPE KENNEDY (UPI)—The United States Thursday installed a camera-carrying Ranger probe on an orbiting station in space, then shot it outward on a planned 200,000-mile trip to take the first close-up pictures of the moon.

A silvery Atlas-Agena rocket, seeking the nation's second space triumph in two days, boosted the 804-pound Ranger into a "parking orbit" around earth after blasting off at 10:49 a.m. EST.

### Crash-Landing Goal

About 25 minutes later, as it soared 115 miles above the Indian Ocean, the Agena rocket was restarted in an attempt to push the speed of the scientific package to 23,800 miles per hour—enough to carry it all the way to a crash landing on the moon.

The Federal Space Agency said that tracking information from ground stations indicated that Ranger "was where it should be" on the long, looping flight toward the moon.

### On Moon Course

Jet Propulsion Laboratories (JPL) said that, "as far as we are concerned the spacecraft is on a normal course and has separated."

Still ahead for the probe were several critical maneuvers, including a planned attempt about 17 hours after liftoff to steer on a more direct course. This called for ground stations to send control jets about Ranger, correcting any errors in its trajectory.

In the last hour of the flight, technicians hoped to turn on their remote controls again and aim Ranger's six television cameras downward toward the lunar surface.

First in 15 months this was the nation's first moon shot in 15 months and everything went as planned.

Hopely, it would end a frustrating series of 14 previous failures in as many attempts at the moon which has come to be regarded as this country's most elusive target in space. The Soviet Union has scored two moonshot successes, both in 1959.

The probe was equipped to snap up to 3,000 photographs and send them back to earth before its death in the crash landing.

In About 60 Hours it all goes as planned, the Ranger would arrive at the moon in about 60 hours, or sometime early Sunday morning.

The launching came 24 hours after U.S. scientists shot a giant Saturn-I super rocket into orbit and claimed world supremacy in rocket power.

The 10-story Atlas-Agena climbed smoothly from its launching pad atop a pillar of brilliant red flame and smoke. Within 30 seconds it streaked through low-hanging clouds 4,000 feet up and began a delicate, curving arc toward the Atlantic missile range.

Leaves Brilliant Trail Ninety seconds after liftoff the rocket climbed through the fringes of space and left a brilliant white vapor trail. The space agency said at that point "The trajectory looks good."

After burning for a little more than two minutes, the Atlas booster engine was cut off and separated.

## Airmen's Bodies Being Brought To West Berlin

By JOSEPH B. FLEMING

BERLIN (UPI)—The bodies of three U.S. airmen killed when Soviet jet fighters downed their unarmed trainer plane in East Germany Tuesday will be brought to West Berlin Thursday night, authoritative sources said.

The wreckage of their T39 twin-jet trainer also will be brought here, the sources said. The U.S. military liaison mission to the Soviet forces in East Germany went to the crash scene from Potsdam and is transporting the bodies and the wreckage back to the West.

A U.S. Army ambulance was sent from West Berlin for the bodies of Lt. Col. Gerald K. Hannan, 41, Capt. John F. Lorraine, 34, and Capt. Donald G. Millard, 33. The Army also sent a flatbed truck and a trailer to retrieve the wreckage of the plane, the sources said.

The three men were killed when Soviet jet fighters forced their aircraft down over East Germany near the city of Erfurt, about 120 miles Southwest of Berlin.

The plane had been on a training flight from Wiesbaden, West Germany, when it apparently strayed over East Germany due to a navigation error.

The U.S. State Department said Wednesday that the Soviets shot down the plane in an "inexcusably brutal act of violence," and demanded punishment for those responsible.

Jet Downing Shocks Meet

GENEVA (UPI)—Presidential envoy William C. Foster Thursday expressed official American "shock and concern" to the Soviet delegation chief at the disarmament conference over the Russian downing of an unarmed U.S. plane.

The U.S. delegation spokesman said Foster told Soviet Ambassador Semyon Tsarapkin before the start of Thursday's government session the U.S. government was concerned "particularly about the downing of a Soviet jet." He said the downing of the American plane was "a very serious matter" and that the U.S. government had nothing to do with the talks and should have no repercussions on them.

The downing of the American plane and Moscow's sharp response to the United States protest nevertheless cast a shadow over Thursday's efforts at the conference to work for East-West agreements on measures to reduce tension.

Foster withdrew a prepared speech and the delegation spokesman said it requires re-consideration of the situation. He said the U.S. government was sending a message to the Soviet Union that the incident itself was not the issue in the conference but the danger of such an incident occurring again.

The incident itself was not the issue in the conference but the danger of such an incident occurring again.



Gen. Nguyen Khanh . . . new Viet leader

## General Acts To Halt Plot For 'Neutrality'

By NEIL SHEPHERD

SAIGON, SOUTH VIET NAM (UPI)—Tough, pro-American Maj. Gen. Nguyen Khanh overthrew the ruling military junta Thursday in a bloodless coup he said was necessary to "sweep away the Communists and traitors who are in favor of neutrality."

The 36-year-old Khanh, commander of the key 1st Army Corps, apparently was backed by most if not all of the leaders of the South Vietnamese armed forces in toppling the three-month-old junta shortly before dawn without firing a shot.

### Saigon Appears Normal

So swiftly and efficiently was the coup planned and carried out that Saigon appeared completely normal on the surface late in the day, save for the presence of troops stationed at key points.

Traffic moved normally, shops were open and school children chatted gaily in the streets.

Khanh said in a broadcast over Saigon Radio that he acted to prevent a French-inspired neutralization of Viet Nam. He hinted the ousted junta members had been plotting with French agents to this end.

Saigon Radio broadcast a decree signed by 17 Vietnamese army generals and a large number of colonels, which said the youthful Khanh had replaced Mai Gen. Duong Van Minh as chairman of the new junta and as head of state.

### Premier Fired?

Reliable sources said Nguyen Ngoc Tho, who had been the civilian prime minister of the provisional government set up in the wake of the overthrow in the Ngo Dinh Diem regime last Nov. 1 and 2, had been fired.

Minh—generally referred to as "Big Minh" because of his unusually large size for a Vietnamese—was seized and taken under heavy guard to general staff headquarters outside Saigon.

Minh himself had taken power with the ouster of Diem, and had been given recognition and support by the United States.

### Status Unclear

Four of his generals also were arrested. But the popular Minh's status was not immediately clear. There were reports that Khanh was trying to persuade him to remain as a figurehead chief of state.

Khanh, without referring to Minh or his supporters by name, broadcast a stinging denunciation of the nation's old military rulers who had toppled the Diem government, but then had failed to press the campaign against the Communist guerrilla Viet Cong forces with sufficient vigor.

### Personalists

"A number of people who wanted to protect their personal interests have not hesitated to ally with the colonialists in pursuit of a neutralist policy, thus preparing the way for Communist takeover of our people," Khanh said.

Two immediate problems for U.S. officials arose from the coup. Should aid to the new government be frozen? Secondly, if diplomatic recognition has ceased, should it now be extended to Khanh's regime?

### Top Of The NEWS

## See Snow Roll? It's Phenomenal

You might think a whole troop of gnomes was having a frolic outing or the ghosts of Hades were getting ready for a snowball fight.

At least it was a haunting feeling for hundreds of motorists the other night when huge snowballs began running across the flats of Superstition Park.

What really was happening was the wind began kicking up a series of "snow rollers," a phenomenon many a meteorologist would like to witness.

The incident was witnessed by Laurel V. McNulty, Desert News photographer who took the pictures you'll find above on Page B-1.

Here's "complete index for all the paper:

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South Viet Nam's latest coup centered in Saigon, stor, the capital, inset map shows relationship of nation to North Viet Nam, Cambodia, Laos.

## U.S. Assesses Coup—Viet's Aims A Puzzle

WASHINGTON (UPI)—U.S. officials closely watched developments in South Viet Nam Thursday, but were unable to assess immediately what effect the peaceful coup d'etat would have on the war against Communist guerrillas.

They said that Maj. Gen. Nguyen Khanh and two paratrooper colonels had been successful in overthrowing the military junta which had ruled the strategic Southeast Asian nation for nearly three months since it deposed Ngo Dinh Diem's regime.

However, officials were puzzled by the new leaders' hint that the latest overthrow was necessary because the junta was conspiring with France to "neutralize" Viet Nam as Laos has been neutralized.

The ousted rulers had repeatedly denounced the "neutralization" idea suggested by French President Charles de Gaulle. And spokesmen for De Gaulle have repeatedly said that the French leader was talking only in very long-range terms and had no immediate neutralization plan.

Officials here described Khanh as a brilliant young officer who has been trained in the United States and France.

Imperiled Ferry Reaches Safety

NEW YORK (UPI)—A city ferry boat ran aground in the East River near Rikers Island Thursday but managed to free herself without damage, the Coast Guard reported.

The boat headed to North Brother Island under her own steam 15 minutes after it was described as aground and "in danger of sinking."

North Brother Island is close to Rikers Island between the Bronx and Queens. Most of the passengers aboard the ferry were believed personnel of the City Prison on Rikers Island.



By NORMAN GOLDSTEIN  
Associated Press Writer

DENVER (AP) — The Midwest is buried under unusually heavy snows. California goes through two winters of extreme drought, then is inundated by rain. The South shivers with unaccustomed cold.

Recurrent drought brings famine and death to areas of West Africa. India is soaked by floods; northern Europe battered by severe storms.

What's happening to our climate? Do such increasingly frequent extremes portend a new pattern? Are we headed for another ice age? Or trouble from a gradual heating of the Earth by mankind's industrial and agricultural activities?

One thing is indisputable: The world has been cooling off since World War II, something like one degree Fahrenheit. But that may be only a temporary swing in the climate.

*Lawrence Journal-World – March 11, 1979*



# Experts assess world's changing climate

By NORMAN GOLDSTEIN  
Associated Press Writer

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One thing is indisputable: The world has been cooling off since World War II, something like one degree Fahrenheit. But that may be only a temporary swing in the climate.

Climatologists agree that the constants of climate are change and natural variability. But they note the increase in world population and soaring demands for food make it tougher to cope with climate extremes.

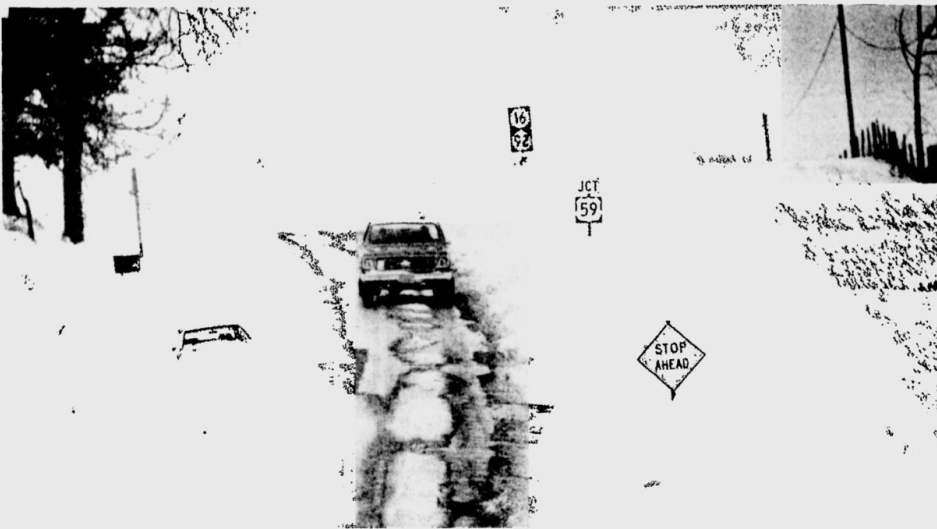
And they have trouble figuring into their studies of weather past, present and future the effects of humanity's accelerating works — pollutants from factories, carbon dioxide released by fuels, the heat of cities.

Normal climate is the total effect of all weather conditions in an area over a period of time — a few winters don't make a trend — and is determined by a complex mixture of many forces.

Over 100 years, "there'll be extreme periods of drought and wet, and warm and dry," said Stephen Schneider of the National Center for Atmospheric Research at Silver Springs, Md. "But the overall global climate will drift up and down, a degree or two over a period of centuries to thousands of years — unless humans do something that makes it change more rapidly."

But what makes the weather do something unusual? During the winter of 1977, for example, the upper level winds, the jet stream, looped up to Alaska and down into the Midwestern states. Results: the West had the warmest and driest winter in more than a century, and the East the opposite.

In 1972 and 1974, the monsoon, the main rainfall, failed in India and Africa. Result: world grain stocks went



The winter of '79 was a harsh one throughout the Midwest, leaving scenes like this one in the Lawrence area.

down, people starved and food prices went up.

Were the extreme weather events of the past few years beyond normal expectations for world climate?

Dr. J. Murray Mitchell, of the National Oceanic and Atmospheric Administration says the world has been cooling off in the long run.

"On an average it's cooled down by something like one degree Fahrenheit or half-a-degree Celsius, and that cooling began around World War II. I would put my money on the idea that the cooling the world has been in for the last 40 years is just one of these temporary swings of climate.

And rather soon we will see the climate changing again into a new warming trend."

Dust particles and factory pollutants, for example, can affect the Earth's heat balance. Some of these particles are cast into the atmosphere by nature — volcanic dust. Thermal, or heat, pollution is released into the atmosphere by light

bulbs, factory smokestacks, car exhausts and house chimneys, Schneider says.

"In Manhattan, for instance, there's a second sun that is burning all the time, including at night. We know that cities all over the world, not just New York, are hotter. We're heating up the place."

Human activities emit carbon dioxide into the atmosphere, about 20 billion tons each year. It comes from burning wood, coal, gasoline, natural gas — any of the fossil fuels. Cutting down forests and vegetation, which absorb carbon dioxide, increases the quantity.

Carbon dioxide has a "greenhouse effect" — it lets the energy of the sun in but tends to trap the heat inside.

Climatologists differ on the effects, but study is under way, including the Global Atmospheric Research Project involving 150 nations that keep close records of weather data to determine any pattern of climate changes.

The project uses everything

from balloons and buoys to fossils and computers. Professors Alfred Ziegler, for example, studies fossils going back 600,000 years for clues to past climate changes.

A sign on the door of his University of Chicago office has two quotations: "You don't need a weatherman to know which way the wind blows" — B. Dylan. "Just a fossil!" — A. Ziegler.

Coping with climate is still the main concern.

"The problem today is not one of climate change but rather the variability of climate," says Dr. Eugene Bieri of the National Science Foundation. "Those last two winters in California are a prime example. Two winters ago, extreme drought. Last winter, they had so much rain they didn't know what to do with it."

There's a record of such variability ever since man has made observations. It doesn't mean the whole circulation of the atmosphere has changed.

"The problem is that the

world's population has increased so much and food demands have become so high that there's little flexibility left."

Schneider says: "We're quite capable of dealing with the averages, but it's the bad winter, the dry summer that we have to be prepared for."

"I've called it a genesis strategy" after Joseph's advice to the pharaoh to store up the grain in the good years against the inevitability of the bad years.

"Well, there are bad years now," Schneider continues, "and it's not just storing grain. It's storing natural gas. You don't have half of Ohio unemployed in a bad winter. It's storing water so that California and Colorado don't go dry all year."

"And it's storing food, not just in the United States but in Africa and Asia, the places

where already half a billion people are malnourished and where any bad stress on food production from bad weather increases famine and starvation."

As with any insurance policy, "you have to pay the premium," Schneider says, "but we must be prepared to put in the investment so we have the security to deal with these weather extremes."

## No charges in accident

Douglas County District Attorney Mike Malone said Friday that no charges will be filed against any of the survivors of a fatality traffic accident Feb. 28 south of Lawrence.

The accident, which took place about 3 miles south of the city on U.S. 59, claimed the life of Clyde D. Biggers, 44, Rt. 1, Baldwin. The Kansas Highway Patrol said Biggers' car apparently crossed the center line of the two-lane road and struck about one-third of the front end of a pickup truck driven by Gordon E. Hughes, 50, Rt. 1, Edgerton.

Hughes and four passengers in the two vehicles reported minor injuries, but didn't require hospitalization.

"It appeared the deceased driver was the cause and fault of the accident," Malone said after reviewing the completed accident investigation report.

"The report indicates that if there were any traffic offenses, they occurred on the part of the deceased."

Malone declined to discuss further what the report showed, although he noted results have been received from a blood-alcohol test of blood drawn from Biggers.

A highway patrol trooper said the day after the accident that beer cans and a whiskey bottle found in the car and the apparent smell of alcohol on Biggers were "some evidence" that Biggers had been drinking and possibly was intoxicated at the time.

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## Sabbatical plan ok'd

A new sabbatical leave policy — drawn up as a compromise between the Kansas University administration and faculty — was unanimously approved by Faculty Council.

Because the proposal was informally approved by administrators before it went to the Faculty Council, Faculty Executive Committee (FEC) members who wrote the new policy, said they expect it to be approved by the administration. Del Stankovic, executive vice chancellor, said he expects to recommend approval of the new policy to Chancellor Archie Dykes.

In the past, the faculty and administration wrangled over the awarding of sabbatical leaves only on a "merit" basis. Faculty Council did not want sabbaticals to be ranked strictly on merit; it wanted the length of time between a faculty member's sabbaticals

to be taken into consideration. However, the administration rejected such a proposal, because the Kansas Board of Regents policies state that sabbaticals must be awarded "in strictly meritorious cases."

Under the present system, "merit" is based on the following criteria: immediacy of opportunity for the candidate; the applicant's time in service; change in responsibility; and the development or improvement of faculty skills.

Under the proposed policy, faculty leaves would still be awarded according to merit, but there would be two subgroups within the "merit" group. All cases that are deemed to be of "exceptional merit" by the University Committee on Sabbatical leaves would be granted sabbaticals first

## Group to show 'nuke' film

Lawrence Residents for a Radioactive-Free Kansas will meet at 7:30 p.m. Monday at the Plymouth Congregational Church, 923 Vt.

A film entitled "Lovejoy's Nuclear War" will be shown and a discussion with the film maker, Sam Lovejoy, will follow.

The program is part of an ongoing Nuclear Hazards Information Series sponsored by the Lawrence group.

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**by Ian Bulliam**

Acoustics are a vital consideration when presenting any kind of production that has to do with sound. Halls these days are built for both their aesthetic and acoustical quality yet one would hope that acoustical, and sound reproducing qualities would be the first consideration. The result of recent efforts to produce acoustically perfect halls, that is a hall where everyone, no matter where seated, will hear the music as close to the way it comes out of the instrument as possible with a balance of sounds, has produced some very strange looking concert halls.

Plan to attend our FREE organ concert featuring Kevin Cain, musical ambassador of Baldwin, on March 15 at 7:00 p.m. is the time — don't miss it! Call 843-3007 for more information.

**MULLIGAN MUSIC HOUSE**  
2801 IOWA 843-3007

# SCIENTISTS AGREE WORLD IS COLDER

But Climate Experts Meeting  
Here Fail to Agree on  
Reasons for Change

By WALTER SULLIVAN

After a week of discussions on the causes of climate change, an assembly of specialists from several continents seems to have reached unanimous agreement on only one point: it is getting colder.

[SCIENTISTS AGREE WORLD IS COLDER – NYTimes.com](https://www.nytimes.com/1997/09/26/science/scientists-agree-world-is-colder.html)

*"Científicos están de acuerdo; el mundo es más frío"*

*"...especialistas de varios continentes parecen haber conseguido ponerse de acuerdo en sólo un punto: se está volviendo más frío."*

## SCIENCE DOCUMENTARY

# New ice age 'could be in our lifetime'

LONDON, Thursday (AAP-Reuter). — A new ice age could grip the world within the lifetime of present generations, Britons were warned yesterday.

The warning came in a major television documentary showing that international scientists have changed their minds about the speed with which the world's "weather machine" can change gear.

"The threat of a new ice age must now stand alongside nuclear war as a likely source of wholesale death and misery for mankind", said science writer Nigel Calder, who compiled the program for the British Broadcasting Corporation.

Latest studies show that ice ages are much more frequent than scientists once thought — and the next one seems to be overdue. According to one theory, "Toronto, Leningrad and Glasgow ought by now to have disappeared under thick ice sheets".

There is also evidence that its onset could be dramatical-

ly sudden, a "snow blitz" rather than the gradual spreading of glaciers, Mr Calder said.

The picture was complicated by a cycle of miniature ice ages.

Scientist Mr George Denton, of the University of Maine, had produced evidence indicating that the world was in fact already in the middle of such an age and that the warmer weather this century was freakish.

"The cooling of the northern hemisphere since 1950, and the dreadful droughts in Africa and India in the 1970s, may well be signs that we are feeling the effects of the little ice age again", Mr Calder said.

This heightened the risk of a big ice age.

"The next ice age is due soon and it can begin to bite suddenly. The new knowledge is so recent and ill-digested that the precise meanings of 'soon' and 'suddenly' are still rather vague. But the sense of the discoveries is that there is no reason why the ice age should not start in earnest in our lifetimes".

Possible trigger factors for a new ice age could be a series of big volcanic eruptions flinging dust into the atmosphere, or an accumulation of man-made pollution, blocking the sun's heat.

Present international co-operation in meteorology was a hopeful sign that man might be able to alter the weather pattern in some way and meet the challenge of the ice.

WARSAW, Thursday, (AAP-Reuter). — Wolves were leaving the exposed upper slopes of the Carpathian mountains, said forest rangers, who predict a war winter for Poland. European bison were gathering into herds and bears were late hibernating, they said.

Move on  
N-arms

[The Canberra Times – November 22, 1974, p.4](#)

[2-23 In Search Of... The Coming Ice Age \(Part 1 of 3\)](#)





Time 1973: "El gran congelamiento"

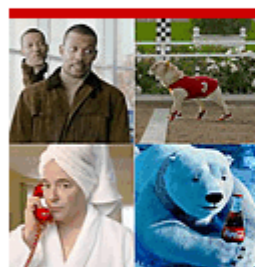


Time 1979: "El enfriamiento de America"

## Science: Another Ice Age?

Monday, Nov. 13, 1972

**More on  
TIME.com**



The Best and Worst Super Bowl Commercials of 2012



PRINT EMAIL REPRINTS SHARE

Like 10 Tweet 0 +1 0 in Share 2

The arrival of another ice age has long been a chilling theme of science fiction. If the earth's recent history is any clue, says Marine Geologist Cesare Emiliani of the University of Miami, a new ice age could become a reality.

Writing in *Science*, Emiliani reports that the earth has undergone at least eight periods of extreme cold and seven of torrid heat in the past 400,000 years. His conclusion is based on cores of ocean sediment from the Caribbean. Composed of the remains of tiny sea animals, the layered sediment provides a record of climatic changes. When the oceans warm up,...

[TIME Magazine Article Another Ice Age? - Nov. 13, 1972](#)

# TIME ARCHIVE

1923 to the Present

Science

## Another Ice Age?

Monday, Jun 24, 1974

In Africa, drought continues for the sixth consecutive year, adding terribly to the toll of famine victims. During 1972 record rains in parts of the U.S., Pakistan and Japan caused some of the worst flooding in centuries. In Canada's wheat belt, a particularly chilly and rainy spring has delayed planting and may well bring a disappointingly small harvest. Rainy Britain, on the other hand, has suffered from uncharacteristic dry spells the past few springs. A series of unusually cold winters has gripped the American Far West, while New England and northern Europe have recently experienced the mildest winters within anyone's recollection.

As they review the bizarre and unpredictable weather pattern of the past several years, a growing number of scientists are beginning to suspect that many seemingly contradictory meteorological fluctuations are actually part of a global climatic upheaval. However widely the weather varies from place to place and time to time, when meteorologists take an average of temperatures around the globe they find that the atmosphere has been growing gradually cooler for the past three decades. The trend shows no indication of reversing. Climatological Cassandras are becoming increasingly apprehensive, for the weather aberrations they are studying may be the harbinger of another ice age.

Telltale signs are everywhere—from the unexpected persistence and thickness of pack ice in the waters around Iceland to the southward migration of a warmth-loving creature like the armadillo from the Midwest. Since the 1940s the mean global temperature has dropped about 2.7° F. Although that figure is at best an estimate, it is supported by other convincing data. When Climatologist George J. Kukla of Columbia University's Lamont-Doherty Geological Observatory and his wife Helena analyzed satellite weather data for the Northern Hemisphere, they found that the area of the ice and snow cover had suddenly increased by 12% in 1971 and the increase has persisted ever since. Areas of Baffin Island in the Canadian Arctic, for example, were once totally free of any snow in summer; now they are covered year round.

Whatever the cause of the cooling trend, its effects could be extremely serious, if not catastrophic. Scientists figure that only a 1% decrease in the amount of sunlight hitting the earth's surface could tip the climatic balance, and cool the planet enough to send it sliding down the road to another ice age within only a few hundred years.



## Calentamiento global

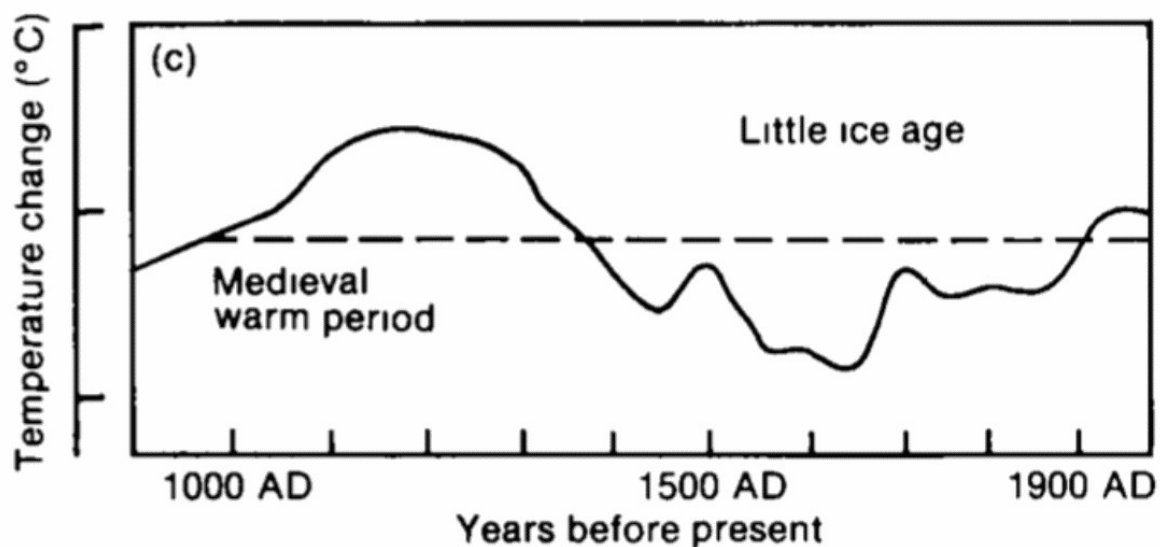
En 1990, Tom Karl y el IPCC mostraron que la Tierra era mucho más cálida hace 900 años, durante el período cálido medieval.

# CLIMATE CHANGE

## *The IPCC Scientific Assessment*

### Observed Climate Variations and Change

C.K. FOLLAND, T.R. KARL, K.YA. VINNIKOV



**Figure 7.1:** Schematic diagrams of global temperature variations since the Pleistocene on three time scales (a) the last million years (b) the last ten thousand years and (c) the last thousand years. The dotted line nominally represents conditions near the beginning of the twentieth century.



Pero en 1995, los científicos del clima habían tomado la decisión de "deshacerse" del inconveniente período cálido medieval (MWP, Medieval Warm Period).



**U.S. Senate Committee on Environment & Public Works  
Hearing Statements**

**Date:** 12/06/2006

**Statement of Dr. David Deming**  
University of Oklahoma  
College of Earth and Energy  
Climate Change and the Media

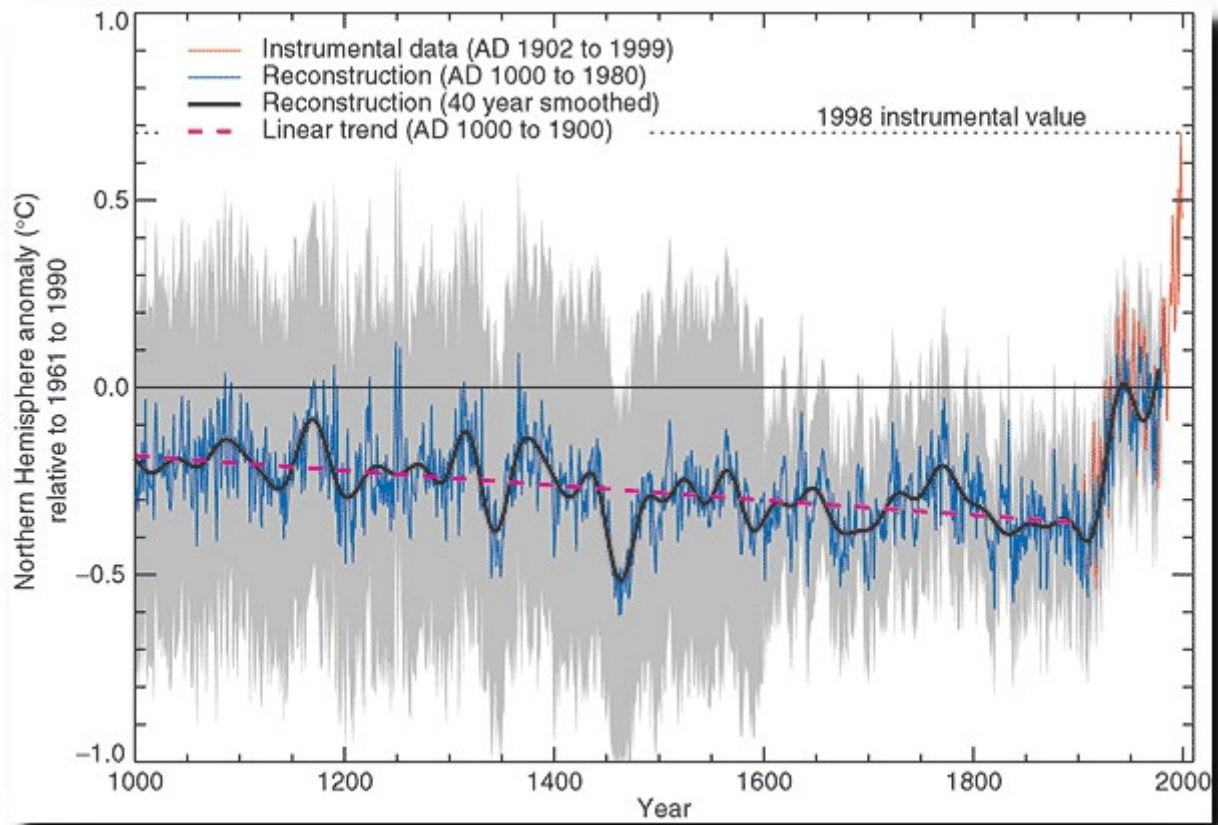
Mr. Chairman, members of the Committee, and distinguished guests, thank you for inviting me to testify today. I am a geologist and geophysicist. I have a bachelor's degree in geology from Indiana University, and a Ph.D in geophysics from the University of Utah. My field of specialization in geophysics is temperature and heat flow. In recent years, I have turned my studies to the history and philosophy of science. In 1995, I published a short paper in the academic journal *Science*. In that study, I reviewed how borehole temperature data recorded a warming of about one degree Celsius in North America over the last 100 to 150 years. The week the article appeared, I was contacted by a reporter for National Public Radio. He offered to interview me, but only if I would state that the warming was due to human activity. When I refused to do so, he hung up on me.

I had another interesting experience around the time my paper in *Science* was published. I received an astonishing email from a major researcher in the area of climate change. He said, "We have to get rid of the Medieval Warm Period."

*U.S. Senate Committee on Environment and Public Works*

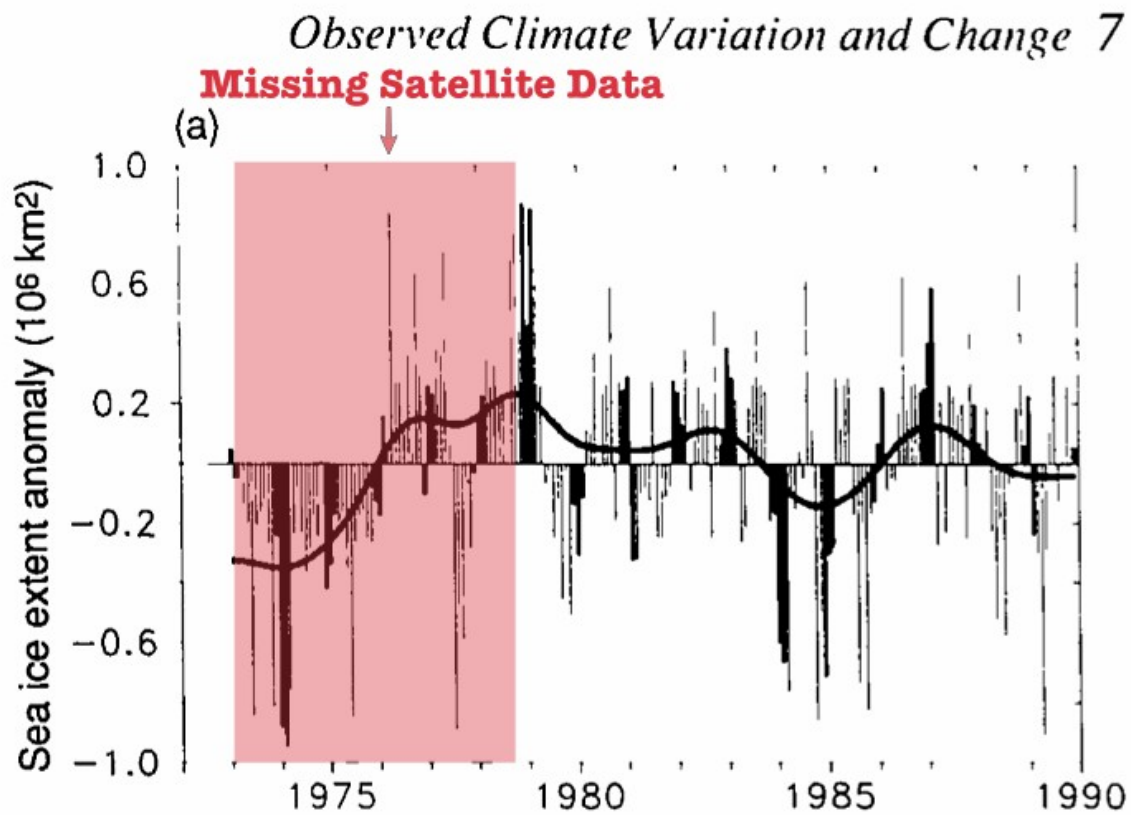


En 2001, Michael Mann y el IPCC siguieron con sus planes, y eliminaron el MWP.



*IPCC Third Assessment Report – Climate Change 2001*

El informe de 1990 del IPCC también tenía datos satelitales detallados de la [NOAA](#) sobre el hielo del océano Ártico, que mostraban que la extensión del hielo marino del océano Ártico era mucho menor en 1973 que en 1979.

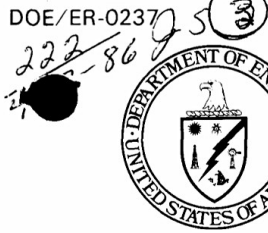


**Figure 7.20:** (a) Northern Hemisphere, and (b) Southern Hemisphere sea-ice extent anomalies. **Data from NOAA (USA).**

[1990 IPCC Report](#)

Científicos del gobierno también sabían en 1985 que la extensión del hielo del océano Ártico era muy inferior en los años 40 y 50 que en 1973.

DOE/ER-0237



United States Department of Energy

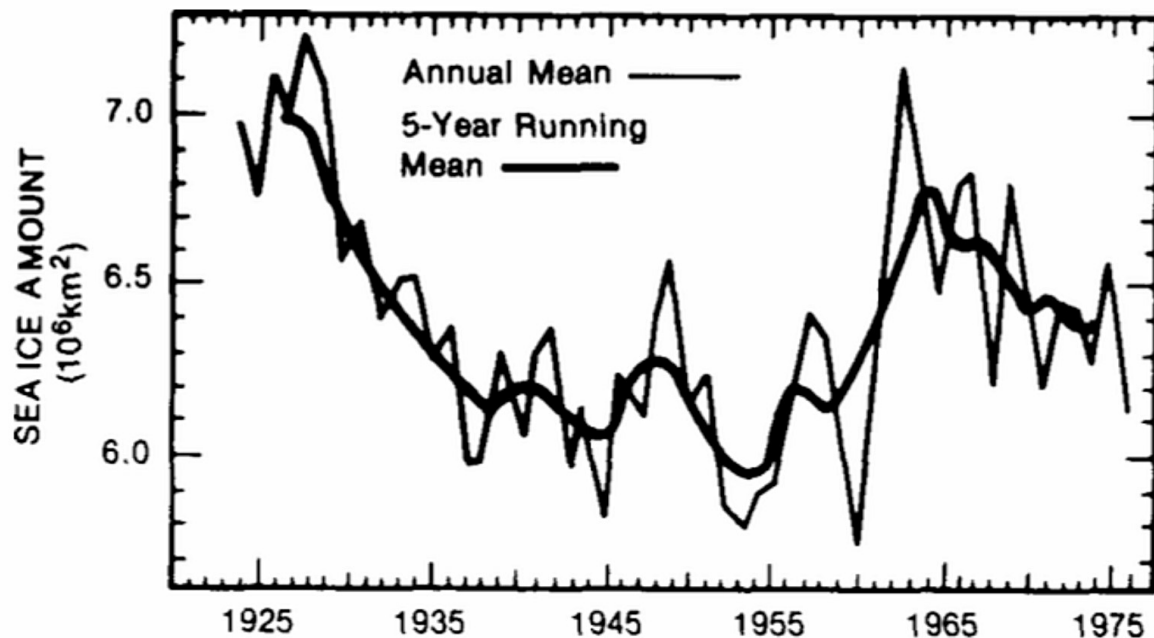
December 1985

Office of Energy Research  
Office of Basic Energy Sciences  
Carbon Dioxide Research Division

DR#1441-1

40

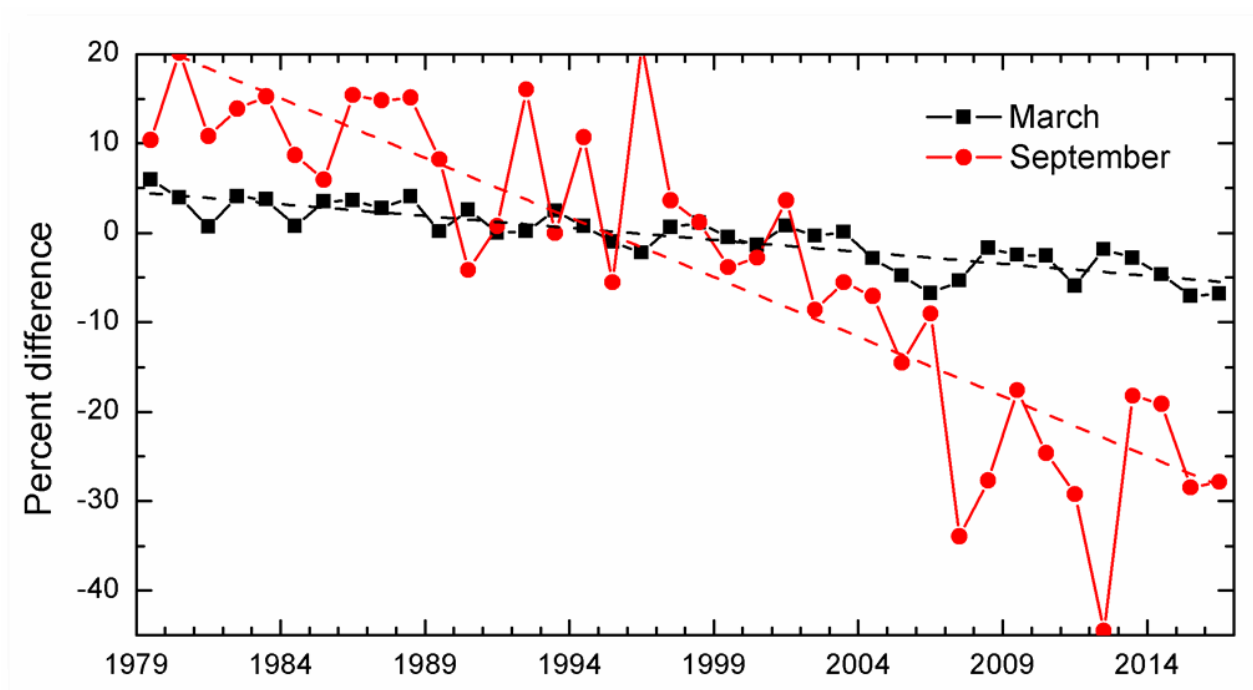
## PROJECTING THE CLIMATIC EFFECTS OF INCREASING CARBON DIOXIDE



**Figure 5.2.** Annual mean and 5-year running mean sea ice amount in the Arctic Ocean from 1920-1975 (data from Vinnikov et al. [1980]).



Los datos anteriores a 1979 sobre el hielo del océano Ártico eran muy inconvenientes, así que la [NOAA](#) simplemente los hizo desaparecer. Ahora empiezan sus gráficos justo en el "año pico" que fue 1979.



[Arctic Report Card 2016](#)

En los 50 los científicos estaban bien informados de que la "delgada corteza" del hielo del océano Ártico estaba desapareciendo, y previeron un Ártico libre de hielo en una generación.

## **The New York Times**

SUNDAY, OCTOBER 19, 1958

### **The Changing Face of the Arctic**

*Some scientists estimate that the polar ice pack is 40 per cent thinner and 12 per cent less in area than it was a half-century ago, and that even within the lifetime of our children the Arctic Ocean may open, enabling ships to sail over the North Pole, as the submarines Nautilus and Skate recently sailed under it. A ship bound from New York to Tokyo would save 2,500*

*Although the idea that a solid ice sheet covers the central Arctic has lingered stubbornly in the popular fancy, the northern cap of ice worn by our planet is actually a thin crust—on the whole, only about seven feet thick—over an ocean two miles deep in places.*

*The Changing Face of the Arctic; The Changing Face of the Arctic – The New York Times*

Los científicos también estaban informados de que en 1970 el hielo del océano Ártico se estaba volviendo más [denso](#) y extenso.

# **The New York Times**

*NEW YORK, SATURDAY, JULY 18, 1970*

**By WALTER SULLIVAN**

The United States and the Soviet Union are mounting large-scale investigations to determine why the Arctic climate is becoming more frigid, why parts of the Arctic sea ice have recently become ominously thicker and whether the extent of that ice cover contributes to the onset of ice ages.

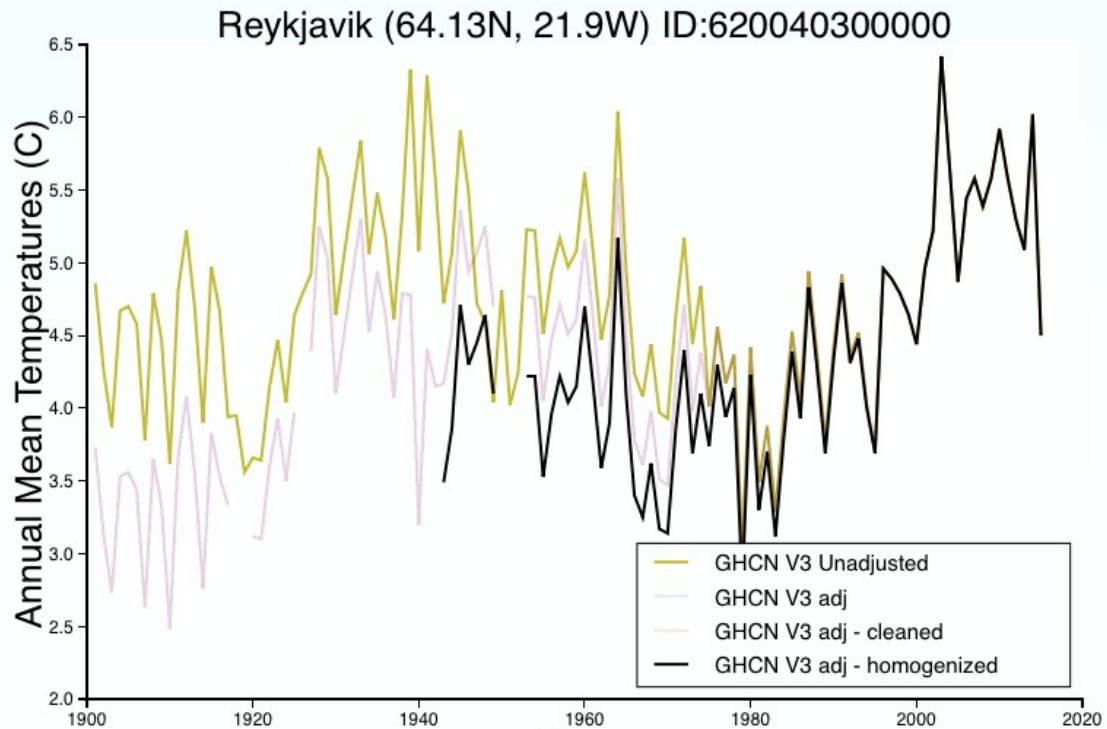
*U.S. and Soviet Press Studies of a Colder Arctic – The New York Times*



Este calentamiento previo y posterior enfriamiento en el Ártico era inconveniente, así que la NOAA y la NASA lo hicieron "desaparecer".

#### GISS Surface Temperature Analysis

Station Data: Reykjavik (64.13N, 21.9W)



[Data.GISS: GISS Surface Temperature Analysis](#)

En 1985 Phil Jones en el [CRU](#) demostró un gran pico de calentamiento global alrededor de 1940, seguido de aproximadamente 0,5 grados de enfriamiento.

DOE/ER-0237 <sup>222-86953</sup>

United States Department of Energy

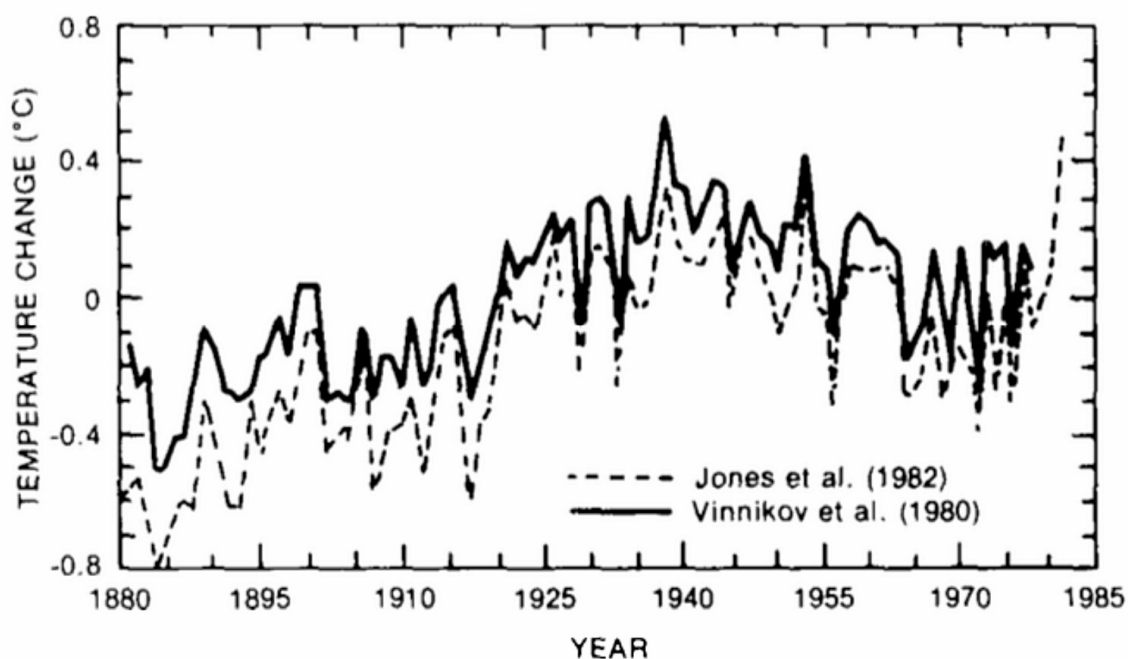
Office of Energy Research  
Office of Basic Energy Sciences  
Carbon Dioxide Research Division

December 1985

DR#1441-1

40

## PROJECTING THE CLIMATIC EFFECTS OF INCREASING CARBON DIOXIDE



**Figure 5.1.** Annual mean surface air temperature anomalies from 1880–1981: (solid curve) Vinnikov et al. (1980); and (dashed curve) Jones et al. (1982). Figure from Weller et al. (1983), and includes points updated to 1981 by Jones.

[Projecting the climatic effects of increasing carbon dioxide \(Technical Report\) | SciTech Connect](#)

El pico de los 40 fue un inconveniente para Phil Jones y el resto de sus compañeros, por lo que discutieron la manera de "deshacerse" de él.

From: Tom Wigley <wigley@ucar.edu>  
To: Phil Jones <p.jones@uea.ac.uk>  
Subject: 1940s  
Date: Sun, 27 Sep 2009 23:25:38 -0600  
Cc: Ben Santer <santer1@llnl.gov>

<x-flowed>  
Phil,

Here are some speculations on correcting SSTs to partly explain the 1940s warming blip.

If you look at the attached plot you will see that the land also shows the 1940s blip (as I'm sure you know).

So, if we could reduce the ocean blip by, say, 0.15 degC, then this would be significant for the global mean -- but we'd still have to explain the land blip.

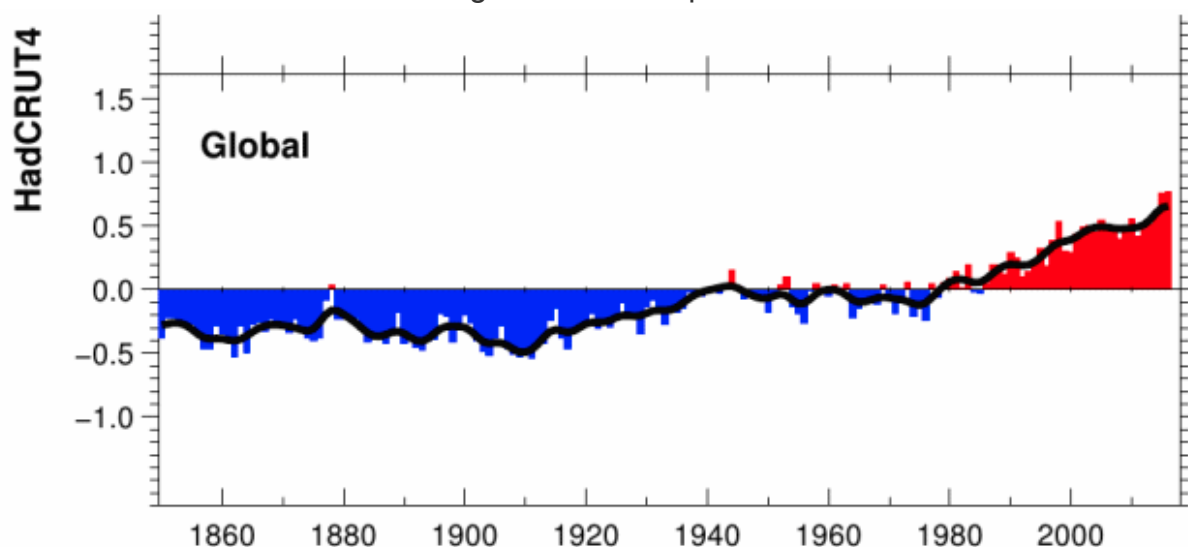
I've chosen 0.15 here deliberately. This still leaves an ocean blip, and i think one needs to have some form of ocean blip to explain the land blip (via either some common forcing, or ocean forcing land, or vice versa, or all of these). When you look at other blips, the land blips are 1.5 to 2 times (roughly) the ocean blips -- higher sensitivity plus thermal inertia effects. My 0.15 adjustment leaves things consistent with this, so you can see where I am coming from.

Removing ENSO does not affect this.

It would be good to remove at least part of the 1940s blip, but we are still left with "why the blip".

### Email

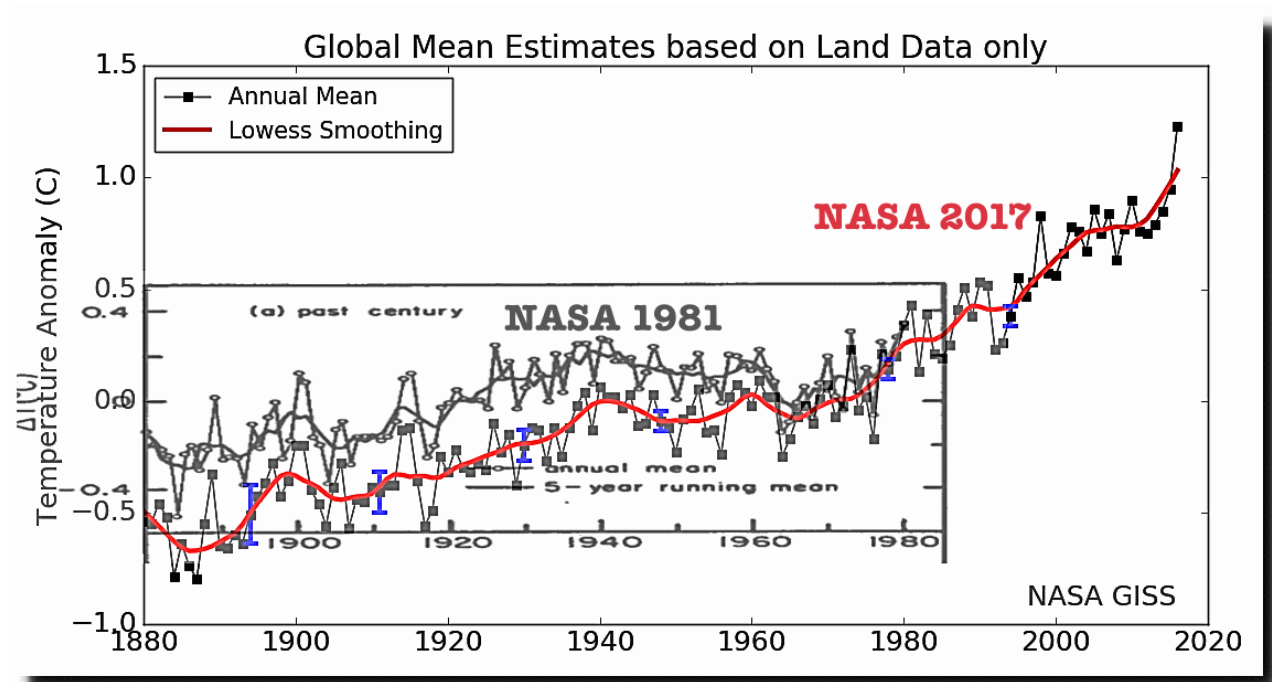
Y eso hicieron. Han eliminado completamente el "inconveniente" de los 40 y posterior enfriamiento. Ya no existe en el registro de la temperatura.



<https://crudata.uea.ac.uk/cru/data/temperature/HadCRUT4.png>



La NASA también ha eliminado el inconveniente calentamiento de los 40 y posterior enfriamiento.



[1981 version](#)

[2017 version](#)

En 2013, la pausa calentamiento global post-2000 fue central en el informe del IPCC.

## Science & Environment

# Global warming pause 'central' to IPCC climate report

By Matt McGrath  
Environment correspondent, BBC News

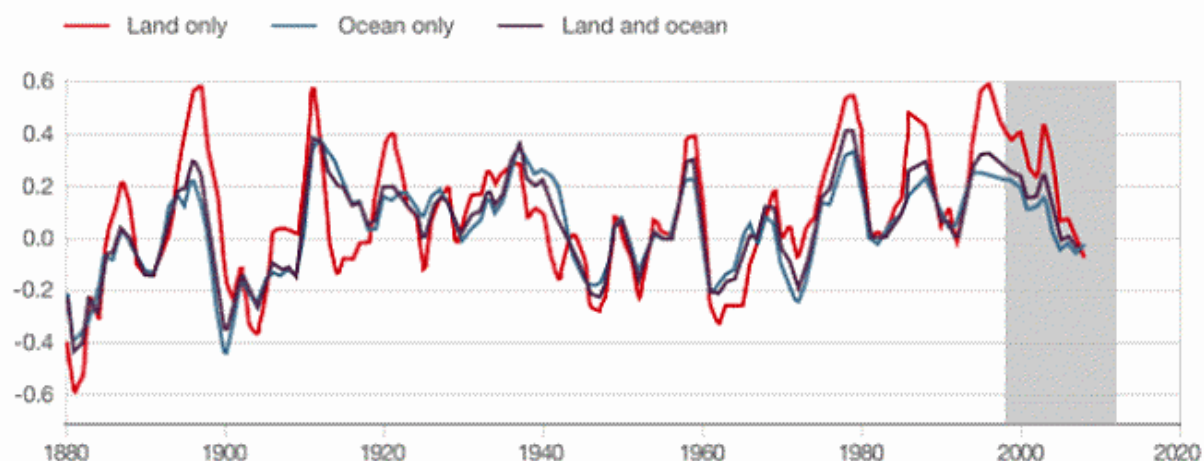
🕒 23 September 2013 | Science & Environment

🔗 Share

### Pause in global warming

Running nine-year trends in surface warming and upper ocean heat uptake. The recent slowdown in global warming is highlighted by the grey shading.

Trend (°C decade)



[Global warming pause 'central' to IPCC climate report – BBC News](#)

Esto era un inconveniente para la NOAA y la NASA, así que Tom Karl y Gavin Schmidt lo hicieron "desaparecer".

## Evidence against a global warming hiatus?

**Date:** June 4, 2015

**Source:** American Association for the Advancement of Science

**Summary:** An analysis using updated global surface temperature data disputes the existence of a 21st century global warming slowdown described in studies including the latest Inter-governmental Panel on Climate Change (IPCC) assessment.

**Share:** [!\[\]\(a03a7eb2f4046e1d3c76772003e549ea\_img.jpg\)](#) [!\[\]\(844169987a590ed8c7e31d5d18950e8d\_img.jpg\)](#) [!\[\]\(2af34e678d9364b2f32b7174f4964d2c\_img.jpg\)](#) [!\[\]\(70453908cab6780413d48bd2b8b15c53\_img.jpg\)](#) [!\[\]\(00c909e82d9243e04b2a707a76cc895d\_img.jpg\)](#) [!\[\]\(e49f830eafafbbbc437c61baa192c426\_img.jpg\)](#)

### RELATED TOPICS

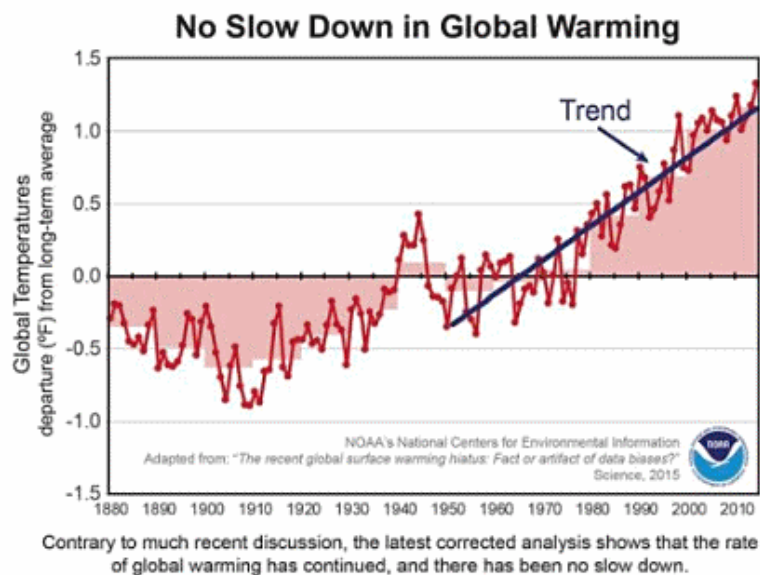
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### FULL STORY



[\*Evidence against a global warming hiatus? — ScienceDaily\*](#)



# RealClimate

*Climate science from climate scientists*

## There was no pause

Filed under: [Climate Science](#) [Instrumental Record](#) [Oceans](#) [RC Forum](#) — rasmus @ 22 January 2017

I think that the idea of a pause in the global warming has been a red herring ever since it was suggested, and we have commented on this several times here on RC: On how [data gaps](#) in some regions (eg. the Arctic) may explain an [underestimation](#) of the recent warming. We have also explained how natural oscillations may give the impression of a [faux pause](#). Now, when we know the [the global mean temperature for 2016](#), it's even more obvious.

[Easterling and Wehner \(2009\)](#) explained that it is not surprising to see some brief periods with an apparent decrease in a temperature record that increases in jumps and spurts, and [Foster and Rahmstorf \(2012\)](#) showed in a later paper how temperature data from the most important observations show consistent global warming trends when known short-term influences such as El Niño Southern oscillation (ENSO), volcanic aerosols and solar variability are accounted for.

A recent paper by [Hausfather et al. \(2017\)](#) adds little new to our understanding, although it confirms that there has not been a recent "hiatus" in the global warming. However, if there are doubts about a physical condition, then further scientific research is our best option for establishing the facts. This is exactly what this recent study did.

The latest findings confirm the results of [Karl et al. 2015](#) from the National Oceanic Atmospheric Administration (NOAA), which Gavin described in a previous [post](#) here on RC. The NOAA analysis received unusual attention because of the [harassment](#) it drew from the chair of the US House Science Committee and the [subpoena](#) demand for emails.

Science is convincing because it builds on independent assessments, which either confirm or disagree with previous findings. A scientific consensus is established when many independent lines of evidence underpin the same conclusions.

[There was no pause « RealClimate](#)

Este fraude fue tan evidente que incluso el principal científico de la NOAA y el farsante de Michael Mann lo admitieron.

## Climate scientists versus climate data

Posted on [February 4, 2017](#) | [692 Comments](#)

by John Bates

A look behind the curtain at NOAA's climate data center.

I read with great irony recently that scientists are “*frantically copying U.S. Climate data, fearing it might vanish under Trump*” (e.g., [Washington Post 13 December 2016](#)). As a climate scientist formerly responsible for NOAA's climate archive, the most critical issue in archival of climate data is actually scientists who are unwilling to formally archive and document their data. I spent the last decade cajoling climate scientists to archive their data and fully document the datasets. I established a climate data records program that was awarded a U.S. Department of Commerce Gold Medal in 2014 for visionary work in the acquisition, production, and preservation of climate data records (CDRs), which accurately describe the Earth's changing environment.

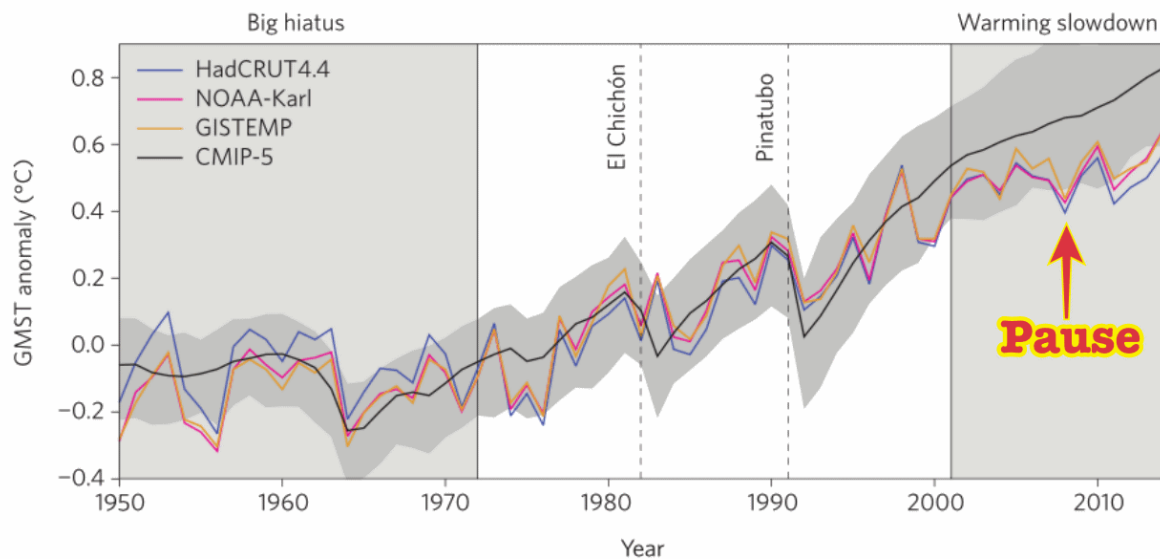
The most serious example of a climate scientist not archiving or documenting a critical climate dataset was the study of Tom Karl et al. 2015 (hereafter referred to as the Karl study or K15), purporting to show no ‘hiatus’ in global warming in the 2000s ([Federal scientists say there never was any global warming “pause”](#)). The study drew criticism from other climate scientists, who disagreed with K15's conclusion about the ‘hiatus.’ ([Making sense of the early-2000s warming slowdown](#)). The paper also drew the attention of the Chairman of the House Science Committee, Representative Lamar Smith, who questioned the timing of the report, which was issued just prior to the Obama Administration's Clean Power Plan submission to the Paris Climate Conference in 2015.

[Climate scientists versus climate data | Climate Etc.](#)

# Making sense of the early-2000s warming slowdown

John C. Fyfe, Gerald A. Meehl, Matthew H. England, Michael E. Mann, Benjamin D. Santer, Gregory M. Flato, Ed Hawkins, Nathan P. Gillett, Shang-Ping Xie, Yu Kosaka and Neil C. Swart

It has been claimed that the early-2000s global warming slowdown or hiatus, characterized by a reduced rate of global surface warming, has been overstated, lacks sound scientific basis, or is unsupported by observations. The evidence presented here contradicts these claims.



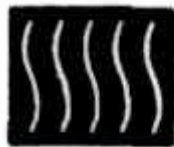
[Nature Climate Change February 1, 2016](#)



En 1990, la NASA determinó que las temperaturas que reportan los satélites eran más precisas que las de la superficie, y deberían ser adoptadas como su estándar.

The Canberra Times (ACT : 1926 - 1995) (about) ◀ Sunday 1 April 1990 ▶

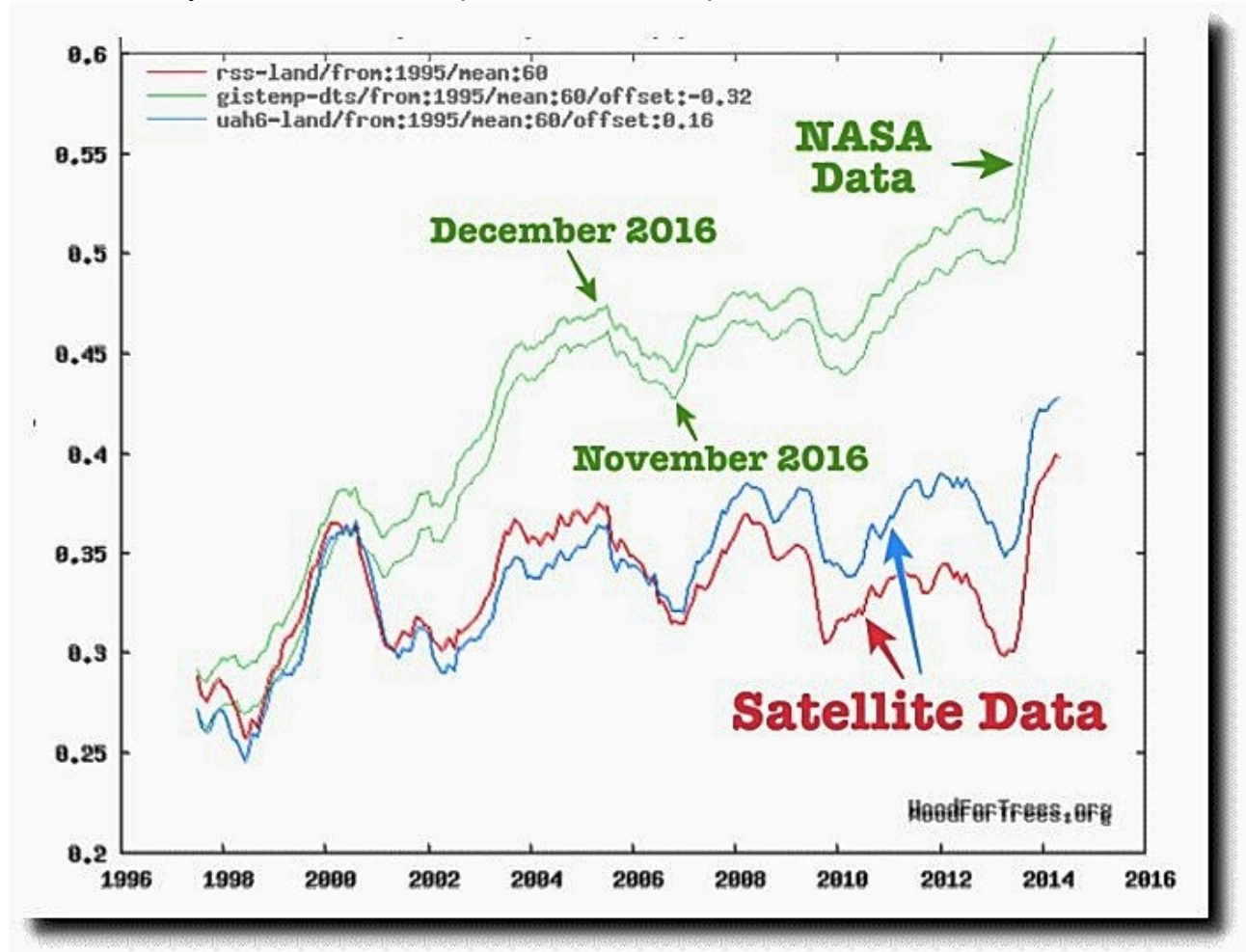
## **Global Warming**



A report issued by the U.S. space agency **NASA** concluded that there has been no sign that the greenhouse effect increased global temperatures during the 1980s. Based on satellite analysis of the atmosphere between 1,500 and 6,000 metres above sea level, the report said that the study found "a seemingly random pattern of change from year to year." While several government and university meteorologists around the world have concluded that average surface temperatures have increased significantly in recent years, the report's authors said that their satellite analysis of the upper atmosphere is more accurate, and should be adopted as the standard way to monitor global temperature change.

*The Canberra Times – April 1, 1990, p.4*

Los datos satelitales no dieron a la NASA la respuesta que querían, así que esta ignoró los satélites, y se inventó las temperaturas de la superficie.



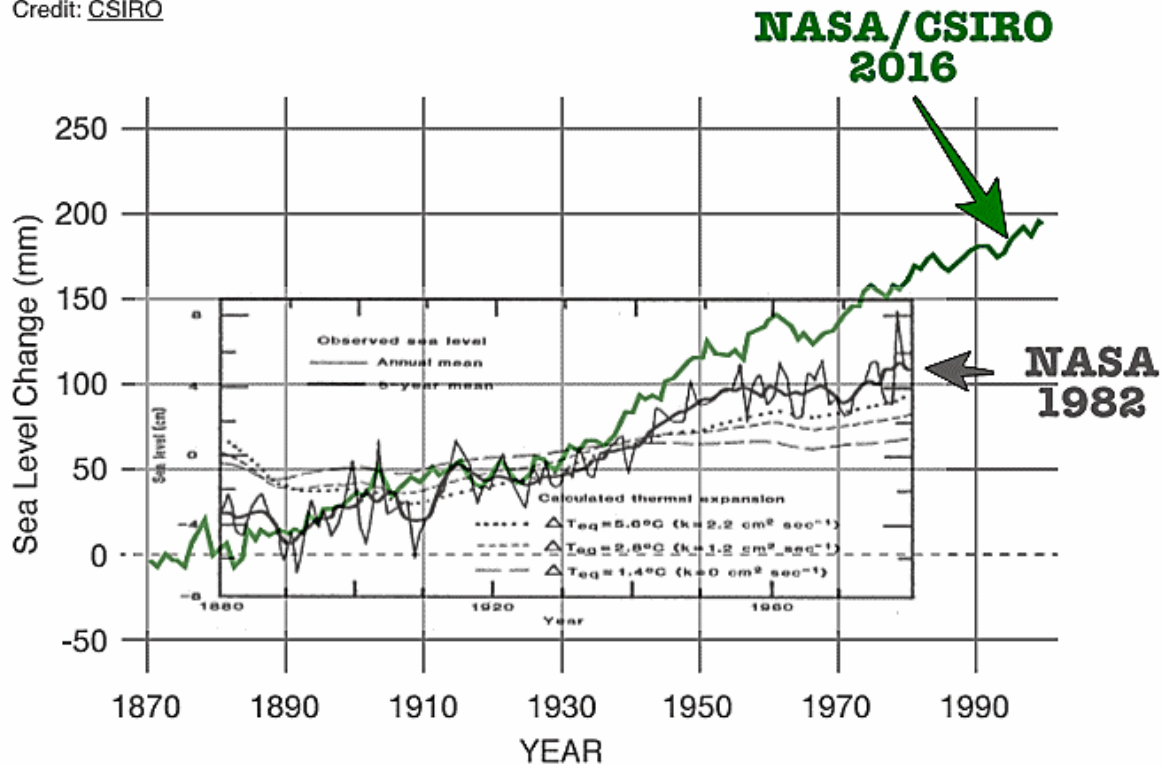
[Wood for Trees: Interactive Graphs](#)

El fraude no se limita a los datos de temperatura. En 1982, la NASA "de" [James Hansen](#) mostró que el nivel del mar dejó de subir después de medidados de 1950 durante 20 años. Actualmente la NASA ha borrado esta pausa, y lo ha convertido en una aceleración.

### GROUND DATA: 1870-2000

Data source: Coastal tide gauge records.

Credit: [CSIRO](#)



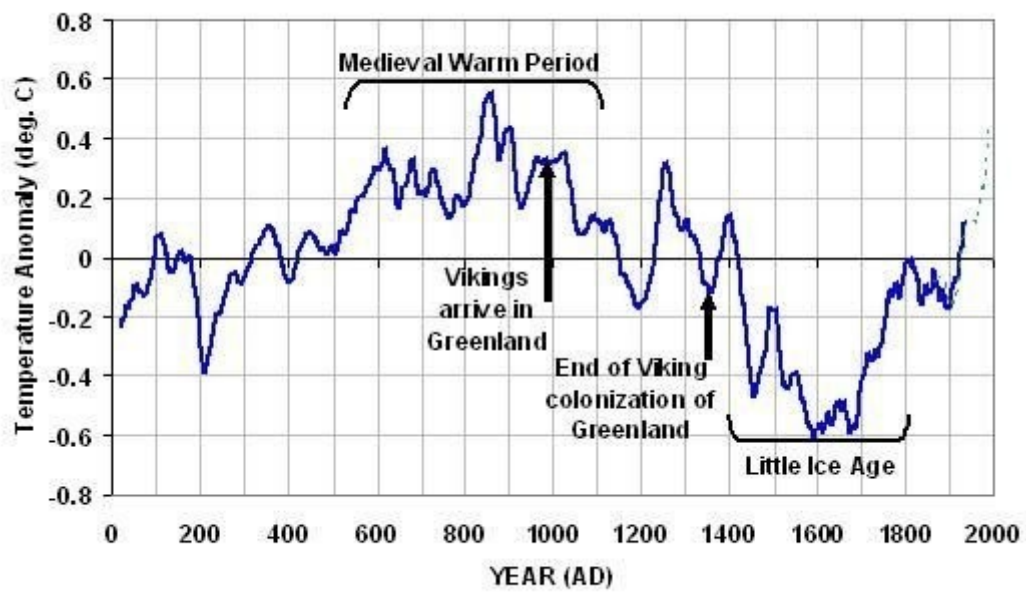
[NASA 1982](#)

[NASA 2016](#)

Esta es tan sólo una pequeña muestra del fraude climático que la NASA, la NOAA y el CRU están realizando en nuestras narices.

[100% Predictable Fraud From Government Climate Scientists](#)





*Evolución de la temperatura a lo largo de los últimos 2000 años*